NEWS MEDIA LITERACY

AMONG UNDERGRADUATE

JOURNALISM STUDENTS

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Abstract: Like most young people, university students are adept in their use of communication technologies such as smartphones and apps. However, this technological savvy does not necessarily translate into news media literacy (NML), which "refers to the knowledge and motivations needed to identify and engage with journalism" (Maksl et al., 2015, p. 29). As such, a better understanding of news media literacy among undergraduates and the factors that impact that literacy is needed. However, there is a lack of scholarship that examines the NML levels among college students. This lack is especially pronounced with regard to undergraduates who are majoring in journalism-related disciplines. As these are the students who are most likely to become news media professionals, and thus the providers of the news media content consumed by their fellow citizens, an examination of their NML levels is particularly warranted.

This study explored the news media literacy levels of undergraduate students at two central U.S. universities using a quantitative survey. A key focus of this study was an examination of the NML levels of students in journalism and journalism-related programs to determine if differences in their respective news media literacy levels could be identified. The results indicated that there were such differences. After placing all survey participants in a high or low news media literacy cluster based on their responses to several measures, journalism students placed in the high news media literacy group 25% more often than non-journalism majors. In addition, journalism students displayed significantly less skepticism regarding news media content that other students. Finally, a relationship was observed between placement in the higher news media literacy cluster and various demographic factors such as age and ethnicity.

Although a number of study limitations should be kept in mind, these results suggest that:

- The need for news media literacy interventions may be greater among marginalized students.
- Given the seeming disconnect between low news media skepticism levels among journalism majors vs. public trust levels in news media that are consistently low, journalism educators need to re-examine how their curricula address this gap.

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CHAPTER I

INTRODUCTION

Background of the Study

To paraphrase Lippmann (1922), democracy cannot work if voters lack the means to get the information they need to make important decisions. In America, that need is met in part by a free press. However, in recent years, skepticism about and scrutiny of the news media in America is sharply up. Americans' trust in the media is at historic lows (Brenan, 2019). In such an environment, where the need for reliable information is as important as ever but trust in the news media is low, the relevance of news media literacy (NML) becomes apparent. Different definitions of and perspectives on media literacy are plentiful. For instance, Maksl et al. (2015) described it as the "knowledge and motivations needed to identify and engage with journalism" (p. 29). They further noted that many media literacy studies tend to look at how "the difficulty people face in differentiating reliable, credible information from unverified and biased information threatens their ability to participate in democratic life" (p. 228). Potter (2018) noted that media literacy is critical given the saturation of information that people encounter daily. As he explained, the "automatic pilot" (p. 2) manner used by many people to process this flood of messages can make them more prone to conditioning by the mass media.

The aforementioned concerns facing the journalism profession come at a time when another important institution is facing difficulties. More and more, higher is the focus of increased scrutiny, criticism, and questions about its value and purpose in recent years. Rising college costs, mounting student debt, concerns about political bias, and other factors prompt ongoing scrutiny and criticism regarding the value of a four-year degree (Anonymous, 2014; Morton, 2018; Hope, 2018). In fact, a July 2018 poll by the Pew Research Center found that 61% of Americans said that higher education in America is headed in the wrong direction (Brown, 2018). In considering how higher education plays a role preparing young people to participate in American society, one question that arises is how well future journalists are being prepared by college and university journalism programs to work in a profession that is already under intense scrutiny. As such, it is worth examining news media literacy among student journalists in colleges and universities.

Problem Statement

Like most young people, university students are adept in their use of communication technologies such as smartphones and apps. However, this does not necessarily mean their NML levels are also high. As one academic lamented, the current generation of college students seem to be "technology-savvy yet information-illiterate" (Padgett, 2017, p.6). If true, a better understanding of news media literacy among undergraduate students and the factors that impact that literacy is warranted. Curriculum based on such insights could enable students to better navigate the media landscape they will increasingly rely on in the years to come.

Moreover, given the numerous challenges faced by journalists and news media outlets, the need for increased news media literacy skills is a matter of economic survival for them (Maksl et al., 2015). However, there is a lack of scholarship that examines the NML levels among college students majoring in disciplines that are typical avenues to careers in professional journalism.

Purpose Statement

The purpose of this study was to explore the news media literacy levels of undergraduate journalism majors and other students at two central U.S. universities using a quantitative survey. A key focus of this study was an examination of the NML levels of students in journalism and journalism-related programs to determine if differences in their news media literacy levels vs. those of students in other majors can be identified.

Research Questions and Hypotheses

Based on work done by Maksl et al. (2015), which itself was based on a theoretical framework from Potter (2014), the following research questions and hypotheses were explored in this study. Note that many of the hypotheses below are directional as opposed to null. This is because the hypotheses in the original study (Maksl et al., 2015) were phrased that way; they are repeated in this study to facilitate comparison. Any hypotheses created solely for this study are stated in the null format.

RQ_1: Is there a significant difference in students' Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of News Media Structures for those with lower and higher levels of NML?

H_1: There will be no significant difference in Need for Cognition, Media Locus of Control, and Knowledge of News Media Structures between students with high NML scores and those with low scores.

As noted elsewhere in this document, students who participated in this study were clustered into a high or low NML group based on their responses to the first three instruments of the survey used: Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of New Media Structures.

RQ_2: What are the effects of NML on students' media behaviors and attitudes – Motivation for News Media Consumption, News Media Skepticism, News Media Consumption, and Current Events Knowledge – when controlling for demographic variables (i.e., age, gender, ethnicity, parental education level and class standing)?

H_2: Highly news media literate undergraduates will be more intrinsically motivated for news consumption relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

H_3: Highly news media literate undergraduates will be more skeptical of news media relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

H_4: Highly news media literate undergraduates will consume more news relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

H_5: Highly news media literate undergraduates will be more knowledgeable

about current events relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

These measures replicated the tests done during the original study (Maksl et al., 2015). Given the importance of news media literacy, understanding the media behaviors and attitudes among undergraduates with higher NML levels was valuable.

RQ3: What differences exist between highly news media literate undergraduates relative to their less news media literate peers when viewed through various demographic characteristics – age, gender, ethnicity, parental education level, class standing and Internet access?

H_6: There will be no relationship between age and placement in either news media literacy group.

H_7: There will be no relationship between gender and placement in either news media literacy group.

H_8: There will be no relationship between ethnicity and placement in either news media literacy group.

H_9: There will be no relationship between the educational level of respondent's parents and placement in either news media literacy group.

H_{10}: There will be no relationship between class standing and placement in either news media literacy group.

H_{11}: There will be no relationship between Internet access reported by students and placement in either news media literacy group.

The original study (Maksl et al., 2015) found differences in placement in the high and low NML groups based on age, ethnicity, race and parental education level, but not gender. All these dynamics were examined as part of this study as well.

RQ4: What is the relationship between news media literacy levels for undergraduates who major in a journalism-related field and those who do not?

H_{12}: Undergraduates majoring in journalism-related fields will not have higher NML scores than other students.

The final hypothesis reflected one of the key interests of the study – namely, the possibility that students in journalism-related fields would display higher NML levels than their counterparts in other majors. Though not directly comparable to this hypothesis, no relationship was found between higher NML levels and participation in high school journalism education programs during the original study.

Research Design Overview

This study was based on an objectivist epistemology and a theoretical perspective of post-positivism (Crotty, 1998). A quantitative survey was used in this study to collect data from undergraduate college students at two midsized universities in the central United States. The otherwise random sample of undergraduates included a purposive sample of students from two majors related to the journalism field (one at each institution).

During the survey, students answered questions in three areas that evaluated their news media literacy levels. The data were used to place students in a high or low NML cluster, and that placement was then compared to their answers in several other areas of the survey. Those areas were their motivations for consuming news media content,

skepticism about news media content, frequency with which they consume news media, and grasp of current events. Additionally, data on the demographic attributes of the respondents were also examined to see if there was any association with the respondents' NML levels. Finally, the study examined how well students in journalism-related majors fare compared to other college students in terms of their NML levels.

Once collected via the Qualtrics survey platform, the data were analyzed using the IBM Statistical Package for the Social Sciences (version 26). The relationship between the variables noted above and the statistical significance of those relationships was tested using two-step cluster analysis, multiple regression, Chi-squares, independent t-tests and gamma coefficients.

Limitations

Like any study that focuses on only one or two institutions, the applicability of the results to other colleges and universities is subject to further testing. However, it should be noted that the combined size of the student bodies at the subject universities is comparable to that of the institution examined in a similar study by Maksl et al. (2015). That study focused on Stony Brook University, with a student body of approximately 25,000. This study looked at institutions with a combined student body of approximately 32,000 undergraduates. That said, these two institutions are not representative of all higher education, particularly with regard to the demographics of the student bodies. Replication of the study at additional institutions is called for before the results can be applied to academe writ large in any meaningful way.

Geography was also a limiting factor in this study. The original study (Maksl et al., 2015) targeted high school teens in a large metropolitan area. Conversely, the student

population for this study attended midsize institutions in the central United States that were in a comparatively low-population area. Obviously, this carried with it a likely skew compared to students at universities in or adjacent to large, metropolitan areas – e.g., undergraduates at UCLA or MIT in Boston. Also, the universities were in a deep red state, a factor that should be kept in mind when considering the timing of the study.

Data collection occurred less than two months before a presidential election that was bitterly contested in an already highly polarized environment, and strong criticism of the news media was a feature of campaign rhetoric. Additionally, the timing meant that political news was prioritized by media outlets while data collection took place. As noted in the Chapter Four, the reliability analysis that was done on the survey indicated that the reliability on two survey instruments was less than optimal. For reasons noted in Chapter Four, this may have been a result of how news media became a heavily politicized element in the presidential campaign.

There was also the coronavirus pandemic's dramatic impact on higher education institutions. Already-declining enrollment numbers dipped further during the first full semester that took place during the pandemic. Accordingly, the argument could be made that the student body during this semester was dissimilar than what could be expected in a more normal semester. Though impossible to quantify, this factor should be kept in mind.

Finally, the potential for dishonesty on certain parts of the survey should be noted. For example, a number of questions asked respondents to evaluate their competencies in areas like Need for Cognition and Media Locus of Control (defined below). Because some respondents may have a certain amount of ego wrapped up in how they see

themselves in these areas, it is possible that they consciously or unconsciously felt the need to exaggerate their capabilities. For instance, some respondents may have been reluctant to admit that they "try to avoid situations that require thinking in depth about something" because of what that would imply about their intellectual prowess. Of course, this is often a potential shortcoming with self-reported behavioral data, but it should be kept in mind when evaluating the results of the two instruments noted above.

Definition of Key Terms

Throughout this document, there are a number of terms and phrases that appear repeatedly and require definition/explanation. Several of these terms are unique to media studies.

Journalism

Like several of the key terms in the study, journalism is a word that is widely known and used but not consistently or uniformly defined. As Shapiro (2014) put it, "a clear definition of what constitutes journalistic activity remains elusive" (p. 555). Given that, to establish a usable definition of journalism for this study, the following dictionary definition is offered: "The collection and editing of news for presentation through the media" ("Journalism", 2020, para. 1).

Media

Advertising Age defined media in a way that is slanted toward the news side of the industry, saying "the definition essentially comes down to the dissemination of information, editorial or advertising, through subscription or otherwise" (Anonymous, 1987). Giles (2003) noted that any definition of media needs to incorporate technology and culture. He said that mass media "could be seen as the intersection of mass

communication, culture, and technology" (p. 7). He elaborated on this to say the definition included "all media that rely on electricity, such as television while excluding media that have a solely communicative function such as the telephone.

Media Literacy

No single definition of media literacy exists. Aufderheide and Firestone (1993) defined media literacy generally as "the ability to access, analyze, evaluate and communicate messages in a wide variety of forms" (p. 4). Potter (2019) defined media literacy as "a set of perspectives that we actively use to expose ourselves to the mass media to process and interpret the meaning of the messages we encounter" (p. 23). Potter also noted that two of media literacy's most important characteristics were the fact that it is multidimensional and exists on a continuum. The different dimensions he described were cognitive, emotional, aesthetic and moral. The continuum aspect denotes his view that people are not simply media literate or illiterate. Media literacy, per Potter, is a question of degrees. As he put it, "There is no point below which we could say that someone has no (media) literacy, and there is no point at the higher end of the continuum where we can say that someone is fully literate" (p. 25).

Media Locus of Control (MLOC)

Maksl et al. (2105) developed a definition for Media Locus of Control based on work by Wallston et al. (1978) that was used to measure the extent to which an individual thinks he or she is in control of their own health. Accordingly, in the context of media usage, Maksl et al. defined MLOC as the extent to which an individual believes he or she controls the influence of the media he or she consumes.

News

As is the case with the definition of journalism, no single, consistent definition of journalism or news exists. Accordingly, the following definition was adapted from the Miriam-Webster online dictionary: News is a report of recent events and/or previously unknown information ("News", 2020).

News Media

The research news website Science Daily ("News media", n.d.) defines news media thusly: "The news media are those elements of the mass media that focus on delivering news to the general public or a target public. These include print media (newspapers, news magazines), broadcast news (radio and television), and more recently the Internet (online newspapers, news blogs, etc.)" (para. 1-2).

Need for Cognition (NFC)

NFC is a psychological construct defined as "a need to structure relevant situations in meaningful, integrated ways. NFC is a need to understand and make reasonable the experiential world" (Cohen, Scotland, & Wolfe, 1955, p. 291). Put more simply, NFC is an intrinsic desire to seek and absorb relevant information.

News Media Literacy (NML)

Like media literacy, no single definition of news media literacy exists. Maksl et al. (2015) said that news media literacy "refers to the knowledge and motivations needed to identify and engage with journalism" (p. 29). They described NML – and its critical importance to both news consumers and journalists – thusly (p. 29):

> News media literacy is oriented toward understanding how and why people engage with news media, how they make sense of what they

> consume, and how individuals are affected by their own news consumption. For professional journalism, improving news literacy is partly a matter of economic survival, a way of sustaining demand for the type of content professional journalists provide, but also of fulfilling its role to help citizens be adequately informed to participate in democratic life.

Significance of the Study

This study holds significance for the body of knowledge in media studies, and its results have potential benefits in multiple areas. It can be of use to scholars who wish to better understand what factors influence news media literacy; academics who wish to pursue media literacy education programs; and both students and faculty in the many disciplines where the ability to stay informed regarding world events – and who thus need effective news media navigation skills – is important.

Research

Although much scholarship exists about media literacy, far less is available on the important subset of news media literacy. Moreover, very little research exists on news media literacy levels among college students. What little there is lacks in a critical area: What are the NML levels of students in journalism-related disciplines, and how do they compare to students in non-journalism majors? The results of the study address both those gaps.

Moreover, this study identified several opportunities to improve the survey instruments used, all of which can be implemented in replication efforts. One of the goals of this study and others like it is the development of a standardized, reliable measure that

can effectively measure NML levels. Accordingly, the aforementioned improvements support scholarly efforts to develop such a measure.

Theory

Very little exists in the way of established theory regarding news media literacy. This is not surprising. After all, theory can only be established after relevant hypotheses have been tested, tested and tested again until they are thoroughly validated and accepted by scholars in relevant fields as a valid explanation of a phenomenon. This means that numerous studies and scholarly efforts are required; but as yet, that has not happened in the field of new media literacy. This study is a step – albeit a small one – in the ongoing efforts by communications and media scholars to better understand an important subset of media literacy. Studies like this contribute to the body of evidence that can, over time, be used to establish theories that better explain what news media literacy is; what factors impact and influence NML levels in individuals; what demographic factors, if any, impacted NML levels; and so forth.

Practice

Brown (2006) noted that media literacy education efforts in the United States are hampered because of a lack of reliable measures that can be used to gauge the effectiveness of such interventions. The purpose of the original study by Maksl et al. (2015) was to create an NML measure that could identify deficiencies in and predictors of news media literacy. Ultimately, such a measure could be used to improve education and training on the subject. That study focused on high school-aged students, so using it to evaluate NML programs in higher education provided an opportunity to test its efficacy in a higher education setting. Another significant aspect of this study is that,

unlike the original, it examined differences in NML levels between students in journalism-related fields vs. other majors. As such, the results of this study provide insights that can be useful to academics in communications, media and other mass communications disciplines.

That said, the potential benefits are not restricted to journalism-related majors. Many disciplines call on students to use news media as part of their studies or, at the very least, be knowledgeable of current events. Accordingly, scholarly efforts that can ultimately lead to increased NML levels among undergraduates will hold benefit for multiple disciplines. Examples of majors that can benefit from students with greater NML include political science, law, business, and marketing to name a few.

Summary

This chapter provided the background of this study as well as the problem statement, purpose statement, research questions, and research hypotheses for the same. The chapter also described the design of this study as well as its limitations and delimitations, definition of key terms, and the study's significance. The next chapter examines the literature and scholarship relevant to this study

CHAPTER II

REVIEW OF THE LITERATURE

The preceding chapter explained the need and rationale for a study examining the news media literacy levels of undergraduate journalism students. This chapter will look at the literature and scholarship that exists on the role of journalism in society, the challenges currently faced by American journalists and news media organizations, and how media literacy and news media literacy (NML) is critically related to these challenges. This will lead to a review of literature on news media literacy levels in the general public and among college undergraduates. Since those undergraduates belong primarily to Generation Z, a closer look at the attributes and attitudes of that group is also included.

The Role of Journalism in a Democracy

The idea that a free society can exist without freedom of the press is a contradiction unto self. As de Tocqueville said during the early days of the Republic (2012):

> So, sovereignty of the people and freedom of the press are two entirely correlative things. Censorship and universal suffrage are, on the contrary, two things that contradict each other and that cannot exist together for long in the political institutions of the same people. Among the twelve

> million men who live within the territory of the United States, not a single one has yet dared to propose limiting freedom of the press (p. 292).

As de Tocqueville explained, the ability to self-govern is dependent upon society's ability to secure the facts necessary to form judgments that can be used to guide itself. However, the citizenry cannot be everywhere they need to be to gather such facts, particularly in a nation of roughly 350 million people spread out across several thousand miles. Granted, not even the news media can be everywhere. But as Lippmann (1922) noted, journalists and the newsgathering organizations they work for position themselves at key points to garner the information a society needs to self-govern. Per Lippmann: "…the news is not a mirror of social conditions, but the report of an aspect that has obtruded itself" (p. 222). Whether this means the White House press room, the back row of a courtroom, or a meeting of a city council in a small Midwestern town, journalists are on hand to report on what is happening for the benefit of their fellow citizens. So important is this function that the free press is referred to as the "Fourth Estate", a term that denotes the critical protections the press provides to the public interest as a watchdog over the three branches of government (Franklin et al., 2009).

Plattner (2012) noted that modern democracy and media differ greatly from earlier iterations of themselves. For example, ancient Greeks had no media in the current sense of that word. True, there were primitive forms of communication that existed, but politics and political debate was a personal affair – it was carried out face to face for the most part. Even centuries later – as recently as the 18th century – prominent Enlightenment thinkers argued that democracy could only work in very small settings because of the limitations of communication. Such thinking is obsolete now as many

democracies exist in the modern world that consist of millions upon millions of people across wide geographies. But what makes it possible to live in a modern democracy is a free press. Representative democracy of the type practiced in the United States is possible because people as far away as Honolulu, Hawaii and Kodiak, Alaska, can get information about what is going on in the halls of power, whether it be in their state capitals or Washington, D.C. For example, modern communications technology makes it possible for citizens to watch proceedings at the highest levels of government in real time despite thousands of miles of distance.

The importance of the free press is underscored by the fact that protections for it are enshrined in the First Amendment to the U.S. Constitution. The idea that the journalism profession should enjoy special rights in return for the information it provides citizens in a democracy evokes the idea of the social contract. Stromback (2005) described this social contract as the news media's obligation to give citizens "the information they need in order to be free and self-governing, (and) the government with the information it needs in order to make decisions in the common interest sensitive to public sentiment" (p. 332). Entman (2005) said the ideal goal of traditional journalism "has been to make power accountable: to keep ordinary citizen apprised about what government is doing, and how it affects them both individually and with respect to the groups and values that they care about" (p. 48).

However, as Sjøvaag (2010) noted, the notion of a social contract between journalism and those the profession serves implies that news reporting meets a certain standard of quality. Yet, despite this, nobody at the time of the nation's founding thought that fairness or objectivity were part of what constituted quality. Far from it, many

newspapers of the day were essentially organs of the different political factions that existed (Butler, 2018). Only a century after the Constitution was signed did aspirations towards objective, factual reporting began to take hold. Adolph Ochs, owner of the *New York Times*, began to push for such standards to distinguish the *Times* from his more partisan competitors in New York. A few decades later, the *Washington Post* was purchased by Eugene Meyer, who established a half dozen principles of "journalistic fairness" (p. 16) that espoused ideas like "The first mission of a newspaper is to tell the truth as nearly as the truth may be ascertained".

Schudson (2019) cited a dichotomy regarding journalism's role in society. Despite the sometimes lofty aspirations of journalists, he says that the free press is not a stewardship that overlooks society in some fatherly manner. The very idea of objective journalism, he said, is that the profession provides factual information to the citizenry that empowers them to make decisions for themselves. However, he also asserted that this conception of journalism is "riddled with self-deception" (p. 159), noting that the daily practice of journalism provides a plethora of examples where objectivity is eschewed by journalists in favor of advocacy. Schudson added that the journalistic profession today is struggling to clearly articulate and understand its purpose in American democracy as it is being "buffeted by gale force winds in every direction" (p. 173). In fairness to journalists and the organizations that employ them, the idea that there is a single, settled-upon standard regarding what good journalism should be is untrue. In fact, quite the opposite is true in American society and among scholars. Nielsen (2017) advocated for what he calls a democratic realist perspective, wherein journalists provide people with reporting that is reasonably accurate, relevant and independently produced,

among other attributes. He contrasted his perspective with that of Schudson (2008), which he described as liberal optimism – this perspective includes informing the public, but also calls for the news media to fulfill other functions such as serving as a public forum and as a vehicle to generate social empathy.

The one tenet of journalism that scholars and most people agree is indispensable is the transmission of reliable information. American news media serve as a source of information that was generally perceived as reliable throughout much of the republic's history (Plattner, 2012). However, multiple events in the last several decades challenged the news media's ability to provide reliable information and the public's confidence in that ability.

Challenges Facing American Journalism

Despite the power it wields and the important role it plays in a free society, the press finds itself in a precarious position in America today. A portion of this dilemma stems from the current political environment, but it would be a mistake to assume that this dynamic will dissipate now that President Trump has left office.

Consider this description of the president: He is "a heartless despot, alone intent on preserving his power. Ambition is his crime and will yet prove his curse…Corruption is his element…" Although this might seem like something from a typical newspaper in 2021 America, it is not. The quote is a 19th century newspaper's description of then-President Andrew Jackson (Toqueville, 2012, p. 293). The same article went on to describe Jackson as a political gangster who was incapable of repentance or virtue. Similar rhetoric regarding Donald Trump or Joe Biden can be frequently found in news media today. Some people might opine that such inflammatory rhetoric will pass in time.

But Tocqueville (2012) disagreed. Comparing the American press of his time to its counterpart in France, Tocqueville noted that many Frenchman also said that the volatility of the press in their day was due to the existing social state, and it would pass when that circumstance did likewise. But Tocqueville was skeptical of this idea, arguing that the press "seems to me to have its own instincts and passions, apart from the circumstance in which it works. What happens in American (sic) really proves it for me" (p. 293).

The tense, often acerbic dynamic between the news media and the White House during the Trump administration was a years-long manifestation of some of the challenges facing American journalism today. However, scrutiny and criticism of the news media's instincts and passions (as Toqueville would put it) predate the 2016 election. For example, public trust in the media's ability to report the news "fully, accurately and fairly" (Brenan, 2019, p. 3) rated no higher than 55% in the last quarter-century (per a 1999 Gallup poll); and in 2016, it dipped as low as 32% per Gallup. Other polls yielded similarly low levels of trust in the news media during this period. Although many factors play into this trend – for example, partisan feelings about the media often drive low poll numbers, as Brennan noted in describing Republican mistrust of the press – the fact remains that American's overall confidence in the news media is weak. Partisanship and politics aside, other factors greatly challenged the Fourth Estate over the last several decades. Not least among these is financial hardship, media consolidation and technological disruption.

Nerone (2012) noted that the advent of free weekly newspapers in the 1980s eroded the monopoly that daily newspapers held on classified advertising, long a key

source of revenue for the dailies. This trend accelerated with the advent of the Worldwide Web and its ability to also sell classified advertising. Noting that the bulk of original reporting in America takes place in newspapers, Barnhurst (2015) explained that the continuing decline in advertising revenues represents a significant problem for the journalism profession. He added that the number of local newspapers cutting staff or going under completely continues to rise due to financial woes. Such financial hardships, in part, led to the trend of media consolidation in America, wherein more and more newspapers and local media outlets are now owned by fewer and fewer corporations. Naturally, private sector corporations' efforts are focused on profit maximization. Higgins-Dobney and Sussman (2013) described the problem that this emphasis portends for a media outlet trying to provide quality journalism, a process that is not inexpensive:

> The pressure to fill up news holes takes precedence over the public service function of local TV news (i.e., programming that is dedicated to cultural and educational enrichment, not necessarily to garner high ratings or service commercial interests). As one technician expressed it: "It's a business. It has nothing to do with news any more (sic). If your station is owned by a corporation or a private entity, [it's about] answering to Wall Street…answering to stock brokers…it's all about economics" (p. 858).

Although the example above specifically references local TV news, corporate ownership of other media entities (print, radio and online) at both the local and national level can have a similar impact on the practice of journalism.

Media consolidation and financial pressures are not the only dynamics that complicate the practice of journalism in America today. Changes in communications

technology also play a significant role. For example, Nerone (2012) cited some of the unintended consequences of the rise of 24-hour cable television in the 1980s along with the rise of talk radio. A significant increase in media outlets that are always on the air dramatically increases the need for content and programming. Nerone said this allowed tabloid journalism to migrate from the margins to a more mainstream role in news media. The emergence of the 24-hours/seven-days-a-week new cycle also disrupted the long-established model used to produce and vet news content before it was distributed to the public. A news operation that is always on the air needs to keep an audience constantly engaged, and this means that fresh content is always in high demand. This does not support a thorough vetting process that, by definition, requires time.

However, as transformative as cable television news and the 24/7 news cycle were to journalism, they pale in comparison to the impact of the Internet and social media. Before the rise of the Internet, the expectations around journalism usually involved what Peter and Witschge (2015) called "grand narratives" (p. 19) regarding the role journalism plays in democracy and the high expectations of the profession. However, in the era of digital journalism, they argued that the focus shifted to a greater emphasis on interaction between the media and its audiences. They noted that "the focus is not so much on *citizen* engagement but rather *audience* or *user* interaction" (p. 20). The distinction is important because this interaction does not necessarily mean enhanced citizenship or greater participation in democracy, so much as it might mean better ratings. Gentzkow (2017) noted that the advent of social media created a new set of threats to a journalism profession and news organizations that were already weakened and battered. The increasing polarization in the nation is, to some degree, enabled by social media

platforms that enable partisans on either side of any issue to seek news and information only from the sources they consider to be favorable to their positions. Fairly or unfairly, Gentzkow said, such a dynamic can fuel the perception of journalism as a partisan endeavor rather than a source of reliable, objective information.

Social media presents another problem for modern journalism vis-à-vis the analytics that are used to measure, monitor and track social media activity. Mackay (2017) explained that social media analytics allow organizations to better understand what their audiences want and then cater to those desires. Given that, the application of such technology in a journalism environment is problematic. Journalists often have to be the bearers of bad news, reporting on stories that are not received favorably by their intended audience. An example of this is political news coverage. In a non-journalism setting, social media analytics that indicate a piece of content is unpopular would lead to that piece of content no longer being distributed (or at the least, being changed radically). Applying this practice to journalism would rob reporters of their autonomy and integrity according to Mackay. In fact, it would ultimately mean abandoning journalism in favor of a practice that is more akin to public relations or advertising. This problem ties into the aforementioned challenges of media consolidation. Working in a highly consolidated environment where much of news media is corporatized, the pressure to generate profits is constant. In such an environment, a tool like analytics that can identify what content is popular and what content is not is rife with the potential for misuse from a journalistic perspective. This is amplified by the fact that, for an increasing number of Americans, social media is the gateway to news information. Shearer and Mitchell (2021) noted a recent Pew Research report that discovered 53% of U.S. adults get news from social

media often or sometimes. Couple that with the aforementioned analytics issue, and the potential for editors and producers to emphasize the social aspects of reporting vis a vis popularity and sharing potential (vs traditional journalistic principles like objectivity, accuracy and the public interest) becomes apparent.

The impact of social media and the Internet on journalism is not purely negative. Donsbach (2013) noted several upsides in this regard. For examples, even in non-democratic systems, the opportunity for people to have a voice and receive information is better now than ever thanks to new technologies. However, Donsbach argued, taking advantage of the opportunities presented by technological disruption requires journalists to adopt a different understanding of their role and acquire different/additional skills than those that were historically taught in journalism programs.

In any event, the challenges facing the news media in America today are many. In such an environment, it is more important than ever that people consume news intelligently and critically. Good journalism can and still does illuminate important issues in society, but that illumination has limits. Describing journalism as "the beam of a searchlight" (p. 237), Lippman (1922) noted, "Men cannot do the work of the world by this light alone."

Media Literacy

Lippmann's metaphorical searchlight is useless if the citizenry cannot understand the information it illuminates. Thus, the idea of media literacy presents itself. Although scholars do not agree on a single definition of this term, media literacy focuses on the notion that depictions of reality in the media are often flawed in terms of their accuracy, completeness and context. (Hobbs & Frost, 2003; Kellner & Share, 2005; Thoman &

Jolls, 2004). Aufderheide and Firestone (1993) defined media literacy generally as "the ability to access, analyze, evaluate and communicate messages in a wide variety of forms" (p. 4). Potter (2019) defined media literacy as “a set of perspectives that we actively used to expose ourselves to the mass media to process and interpret the meaning of the messages we encounter” (p. 23). Potter also noted that two of media literacy’s most important characteristics are that it is multidimensional and exists on a continuum. The different dimensions he describes are cognitive, emotional, aesthetic and moral. The continuum aspect denotes his view that people are not simply media literate or illiterate. Media literacy, per Potter, is a question of degrees. As he put it, “There is no point below which we could say that someone has no (media) literacy, and there is no point at the higher end of the continuum where we can say that someone is fully literate” (p. 25).

Several scholars noted the important implications that media literacy has for education in the 21st century, given the technological changes to how people communicate. Kellner and Share (2005) said that educational efforts involving media literacy in the United States lag behind those in Europe. They argued that the technological changes of the early 21st century make it more important than ever that such educational efforts be undertaken. They added that it would be “highly irresponsible in the face of saturation by the Internet and media culture to ignore these forms of socialization and education” (p. 371). Thoman and Jolls, 2004) echoed this sentiment, stating:

> The convergence of media and technology in a global culture is changing the way we learn about the world and challenging the very foundations of education. No longer is it enough to be able to read the printed word;

> children, youth, and adults need the ability to critically interpret the powerful images of a multimedia culture… Moreover, it paves the way to mastering the skills required for lifelong learning in a constantly changing world (p. 18).

Digital media also has implications for leadership educators. Phelps (2012) recommended leadership educators bear three considerations in mind when incorporating digital media and technology into their efforts. These included avoiding the temptation to integrate technology simply for the sake of doing so; making sure that the digital media platforms used align themselves reasonably with the content being presented; and avoiding the assumption that all young people are familiar with all technology simply because of their age.

Within mass communications, at least one scholar has concerns about the amount of media literacy education in that discipline. Based on a small survey of instructors, Ashley (2015) noted, "It seems that media literacy has remained at the periphery in the field of journalism and mass communication, which tend to focus more on skills and training, and less on critical analysis" (p. 170). She expounded on her concerns about emphasis by noting a lack of scholarly articles regarding media literacy in the *Journalism and Mass Communication Quarterly*, a prominent journal in the discipline.

The implications of the digital world are particularly noteworthy vis a vis media literacy and democracy. Mihailidis et al. (2013) described digital media literacy as a core competency for any citizen who wants to engage in a democracy. Nelson et al. (2017), using data from a longitudinal study of undergraduates at one Midwestern institution, found that decreases in traditional forms of political participation were replaced via

digital methods of engagement. The impact of digital technology on news media is also worth noting. Given how the 24/7 news cycle that began in the 1980s is now amplified by the digital revolution – via the blogosphere, participatory journalism, social media and so on – the impact of digital technology on NML is worth scrutinizing,

News Media Literacy

Though not a definition, Maksl et al. (2015) said that news media literacy "refers to the knowledge and motivations needed to identify and engage with journalism" (p. 29). That said, journalism has undergone dramatic changes since the turn of the millennium. As Kovach and Rosenstiel (2010) noted, sharing information about breaking news stories is no longer the sole purview of professional journalists. News media was traditionally the way that the citizenry got information (Christians, Glasser, McQuail, Nordenstreng & White 2009), but the press' control over the flow of information vis a vis its gatekeeping ability (Shoemaker & Vos, 2009) is greatly reduced because of the digital media revolution. Now, anyone with a Twitter account, YouTube channel or Facebook page potentially has equal footing with working journalists vis a vis their ability to get their messages out to a large audience eager. Consider the comparison in Table 2.1.

Table 2.1.

Reach of Cable News Networks vs. Taylor Swift

	Twitter followings as of 1/12/21	Primetime ratings 2020 (Johnson, 2020)
CNN	52M	1.8M
Fox News Channel	20M	3.6M
MSNBC	4M	2.2M
Taylor Swift	88M	N/A

Despite a significant increase in ratings and Twitter followers during 2020 that were fueled by the COVID-19 pandemic and a presidential contest (Johnson, 2020), the collective ratings/Twitter reach of the three biggest cable news networks is still smaller than a single Twitter account belonging to popstar Taylor Swift. Admittedly, Twitter is not the only avenue the cable news networks have to reach people, and Swift is not a news media figure. However, she is increasingly vocal on serious matters such as elections and political figures (DeLuca, 2020). Given that, her massive reach via social media gives her the potential to sway people's opinions on important issues, and this reach is on par with that of the major cable news networks. Simply put, this comparison and similar ones that could be made illustrate Kovach and Rosenstiel's point about media's loss of its traditional gatekeeper role. Moreover, Swift and others with large social media followings do not bear the same ethical requirement as journalists to ensure that the information they share is accurate (Shoemaker & Vos, 2009). The result can be the spread of misinformation. As Kovach and Rosenstiel (2010) noted, this means consumers of news and news-related information are left to decide what is fact vs. opinion and what is true vs. what is not. Navigating this environment calls for news media literacy.

Maksl et al. (2015) described NML – and its critical importance to both news consumers and journalists – thusly (p. 29):

> News media literacy is oriented toward understanding how and why people engage with news media, how they make sense of what they consume, and how individuals are affected by their own news consumption. For professional journalism, improving news literacy is

> partly a matter of economic survival, a way of sustaining demand for the type of content professional journalists provide, but also of fulfilling its role to help citizens be adequately informed to participate in democratic life.

Note how the description ties news media literacy to democracy. As noted earlier, it is difficult to envision a functioning democracy that exists without a free press. Goidel et al. (2017) described news media as a critical, necessary part of democratic governments. However, no matter how good the quality of information provided by the news media, the efforts of journalists and editors would be for naught if – invoking Lippmann's searchlight metaphor again – the public does not possess the skills and competencies necessary to understand the information that is being illuminated.

News Media Literacy in the General Public

New media content is no less immune to the problem of misrepresenting reality than are other media genres (Shoemaker & Reese, 1996; Shoemaker & Vos, 2009). Accordingly, some people view such content skeptically. This might lead to the assumption that such skepticism is necessarily tied to avoidance of media content. Although that is true in some cases, high levels of a Need for Cognition (NFC) can be a significant moderator of that relationship (Tsfati & Capella, 2005). NFC is a psychological construct defined as "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world" (Cohen, Scotland, & Wolfe, 1955, p. 291).

Although concerns about news media literacy levels amongst the citizenry are not new, they received increased attention following the 2016 election. For example, much

controversy exists around Facebook since the 2016 election because of its perceived role in the outcome vis a vis the content on its site. Following the election, the executive director of the National Association for Media Literacy Education (NAMLE), Michelle Lipkin, asserted that Facebook should be held accountable for such content (Padgett, 2017). She also called on media and educational leaders to be more active in their efforts to advance media literacy education, and she advocated for a media rating system for news outlets that would evaluate them on the basis of factors such as credentials, bias and fact checking.

Vraga et al. (2012) noted that antagonistic perspectives toward news media content can be reduced with literacy training. Using a controversy concerning biofuels as a basis, they employed a web-based experimental design to test a group of college students as well as others in their study. Their findings supported the idea that NML levels impact how people perceive the credibility of news media, and they also found that exposure to a news media literacy video increased participants' perceptions of the credibility of the media story used as well as trust in the news media to cover the biofuels issue more generally.

Craft et al. (2017) conducted a web survey with 397 respondents in spring 2016 to see if people with higher NML levels were less likely to endorse conspiracy theories. The instrument used in this study to test NML was very similar to the one noted earlier in the Maksl et al. (2015) study on news media literacy levels among teens. (Despite differences in the lead author, the two studies in question were conducted by the same three academic researchers – hence the similarity in instrumentation.) The 2016 study found that greater knowledge of the news media predicts a lessened likelihood that participants would

endorse conspiracy theories. This was true even in the case of conspiracy theories that were consistent with the political ideology of the respondents in question.

Tully et al. (2018) conducted a series of interviews with 22 adults in different parts of the United States to gauge NML. Although the study did indicate that people understand how their perspectives impact their choices in news consumption, and the participants were able to identify political partnership tied to certain news outlets, the small sample size makes it impossible to generalize the findings.

The studies above reflect what Vraga et al. (2015) said described as the "considerable divergence among scholars in how to define, implement, and measure news media literacy" (p. 41). Vraga et al. themselves employed measurement scales they developed to gauge self-perceived media literacy (SPML) and perceptions of the value of media literacy (VML). That said, measures of NML exist that are more comprehensive than Vraga et al. Using a model of media literacy developed by Potter (2004), Maksl et al. identified several criteria related to knowledge of the news media and knowledge of self that could be used to measure news media literacy. Functionally, these included:

- An individual's tendencies for automatic vs. mindful thought processing. This criteria is related to the Need for Cognition (NFC).
- An individual's Media Locus of Control. This is the degree to which an individual perceives himself or herself as having control over how news media influences them.
- Knowledge of how news media organizations are structured and how they function.

Generation Z

As noted earlier, the focus of this study was undergraduate college students. That means that the vast majority of the research subjects were in their late teens and early

20s, an age group that belongs to the so-called Generation Z, or Gen Z. As such, it is worth examining that audience, so that the appropriate context can be placed on their news consumption habits, media attitudes, and so forth.

Members of Gen Z are those people born between 1995 and 2010; notably, the initial birth year of this generation corresponds to the birth of the Internet. As Seemiller and Grace (2016) noted, this group is sometimes referred to as digital natives because they are the first generation to be raised entirely in a world where the Internet exists. This is highly relevant to this study given the many ways that the Internet and digital technology have impacted news media. Whereas earlier generations look to events like the Kennedy assassination, Watergate and the moon landing as cultural touch points that everyone in the populace was captivated by, Gen Z looks to 9/11, the Great Recession and several high-profile mass shootings as their historical milestones.

Generation Z is growing up in a world where paradigms and perspectives – which are shaped in part by news media coverage – have undergone radical change in recent decades. Whereas the preceding generation, the Millennials, grew up in a world where America was increasingly the world's lone superpower ("Pentagon plans", 1992), Gen Z lives in a world where that status is increasingly challenged and questioned. Baby Boomers grew up in a world where many marginalized groups faced bigotry and discrimination. Although such prejudices have not been completely eradicated, Gen Z is growing up in a world where groups such as the LGBT community receive increasing acceptance. In fact, the aforementioned bigotry itself is increasingly the focus of stigmatization. Many Baby Boomers grew up in an America where the nation's leader (Eisenhower) was a beloved military hero whose character and integrity were largely

unquestioned. Gen Z is coming of age in a world where, until recently, the American president was a bitterly polarizing former reality TV star.

In terms of demographics and psychographics, Generation Z is the most diverse generation in American history. Based on 2019 figures from the Pew Research Center (Parker and Igielnik, 2020), a slim majority (52%) of the group or White, while 25% are Hispanic, 14% are Black and 6% are Asian. They are also the most educated generation in history. In 2018, 57% of Gen Zers between the ages of 18 and 21 who were not in high school were enrolled in college. That is 5% higher than Millennials and 14% higher than that Generation X at comparable points. They are also far more likely than previous generations to have a college-educated parent. In 2019, 44% of Gen Zers had at least one parent with a bachelor's degree as compared to Millennials (33%) and Gen Xers (24%). Ideologically, they differ from older generations. For example, 70% of Gen Z members told Pew that government should do more to solve problems. This is higher than any generation before them, though it should be noted that this number is in line with increases in this sentiment from one generation to the next dating back to the World War II generation.

In terms of their stances on sociopolitical issues, Gen Z tends to be more progressive than Generation X and older generations. For instance, 54% of Gen Zers believe that climate change is due to human activity, which is 6% higher than Gen Xers and 9% higher than Baby Boomers. (Millennials actually scored two points higher than Gen Zers in this measure.) On the subject of same-sex marriage, 48% of Gen Zers think that it is a good thing for society as compared to 33% of Gen Xers and 27% of Baby Boomers.

A study by consultancy McKinsey (Francis & Hoefel, 2018) characterized Gen Z as a generation that seeks truth. The study also drew a sharp distinction between Gen Z and its predecessor:

> Gen Zers value individual expression and avoid labels. They mobilize themselves for a variety of causes. They believe profoundly in the efficacy of dialogue to solve conflicts and improve the world. Finally, they make decisions and relate to institutions in a highly analytical and pragmatic way. That is why, for us, Gen Z is "true gen". In contrast, the previous generation – the millennials (sic), sometimes called "me generation" – got its start an hour of economic prosperity and focuses on the self. Its members are more idealistic, more confrontational, and less willing to accept it for except diverse points of you. (para. 3)

Economically speaking, Gen Z is coming of age as a financial and consumer powerhouse. (Hoffower, 2020). They currently earn $7 trillion in income across their 2.5 billion members according to Bank of America. Moreover, despite losing an estimated $10 trillion in earnings because of COVID-19, members of Gen Z are predicted to earn $33 trillion annually by 2030 and surpass the income of Millennials the year after that. As one report put it, "In a little over a decade, Gen Z will be taking over the economy" (para. 1).

How Does Gen Z See Itself?

With the aforementioned generational attributes in mind, how does Gen Z see itself? Seemiller and Grace (2016) conducted an extensive study involving undergraduates at more than a dozen institutions of higher education spread across the

United States. According to the self-reported data in the survey, Gen Z respondents described themselves as:

- **Loyal**. Whereas a well-known TIME magazine cover described Millennials as the "Me Me Me Generation" (Stein, 2013), 85% of the Gen Z students in the study described themselves as quite the opposite of self-centered. They saw themselves as loyal people with strong feelings of concern for those around them and issues that affect people besides themselves. This concerns, according to the study, include people outside their day-to-day interactions.
- **Compassionate**. More than 70% of respondents described themselves as compassionate. The study's authors speculated that this could be a reflection of the information-rich world in which Gen Z lives. Because they have access to a wealth of information about the world around them, this means they are more exposed than previous generations to disasters, tragedies and calamities that occur worldwide. Also, the fact that they are constantly connected with their friends and family via social media and other digital communications platforms means that they are constantly exposed to the challenges and hardships experienced by those they care about. Per Seemiller and Grace, these constant inputs could promote sympathy and compassion.
- **Thoughtful**. In another contrast to perceptions of Millennials, numerous study participants provided the authors with detailed stories about their concerns regarding the issues faced by others. The authors felt that these accounts were genuine displays of thoughtfulness.

- **Open-minded**. Among the survey respondents, 70% of them described themselves as open-minded, which corresponded to another study by the authors where 70% of Gen Z members described themselves as "in the top or above average in understanding others compared to the peers" (Seemiller & Grace, 2016, p. 9). Noting that Gen Z is likely to be the last generation in America that is majority White, Seemiller and Grace described Gen Z as welcoming differences with "an open mind and open arms, believing more diversity in America is a good thing" (p. 9) Part of the reason for this open-mindedness could be the aforementioned information-rich age that this generation lives in. They are continually exposed to many different ideas, lifestyles, and cultures via social media and Internet-based news content. Accordingly, these digital natives were raised in a world where exposure to differences is common.
- **Responsible**. More than two-thirds (69%) of the students in the study describe themselves as responsible. The authors asserted that the realities of the post 9/11 world, vis-à-vis the financial and political instability that characterizes that period, is one of the drivers here. They summarized the aggregate attitudes in the study as comprising a "if not you, then who?" (p. 10) mindset. Based on the data, the authors opined that the sense of responsibility felt by Gen Z applies both to the way respondents view their own lives as well as the problems facing the world around them.
- **Determined**. Nearly 3/4 (74%) of the survey respondents described themselves as determined, and another 78% of them said that their determination to achieve is higher than that of their peers.

Other results indicated that, while the respondents see themselves favorably vis a vis the traits noted above, their opinion of themselves doesn't necessarily extend to their peers. For instance, respondents attributed characteristics to their peers that could be described as irresponsible and self-focused. Other findings of the study indicated that the respondents saw themselves as less risk inclined than their peers. Mohr and Mohr (2017) noted the conflicts in this study and added that, while respondents said they were inclined to be compassionate, they are also critical of their peers. They described themselves as entrepreneurial, but said they didn't consider themselves creative. They simultaneously talked about being fearful of the future while also excited about it.

Notwithstanding these conflicts, other published research roughly corresponds with Seemiller and Grace's findings. For example, Schwieger and Ladwig (2018) did a meta-analysis that compiled the results of numerous academic and private sector research efforts to profile Gen Z. Their findings were roughly consistent with Seemiller and Grace. The Gen Z attributes in their compilation included phrases and descriptors like creative, entrepreneurial, fairness, personalized microexperiences, trust, social media connections, and pragmatic.

Mental health concerns are a significant consideration for this generation ("Generation Z", 2019). For instance, a strong majority (70%) of respondents in one study said that they thought that anxiety and depression were a major problem among people their age. These responses were particularly noteworthy in that they were consistent across all income levels; strong majorities ranging from 60-75% of respondents agreed that anxiety and depression was a problem for Gen Z regardless of household income levels. In addition to those findings, a majority of respondents in the

same study thought that bullying and drug addiction were also major problems for members of Generation Z.

Gen Z, Technology and Education

Gen Z lives in an age of unprecedented technology infrastructure. The generation's noted proclivity for staying continually connected via their mobile devices is supported in the typical home environment, which is well equipped to support their online activities. As long ago as 2011, nearly 100% of undergraduate students reported having home Internet access (Smith et al., 2011).

Seemiller and Grace (2016) noted that Gen Z is a more sedentary generation than its predecessors. Numerous factors contribute to this, such as declines in organized team sports, elimination of physical education programs in parts of K-12 education, and – perhaps most of all – Gen Z's inclination toward a digital lifestyle whereby they are constantly connected to a screen of some kind. Needless to say, this means that their engagement with news media content is typically going to happen in a digital space as opposed to a more traditional media environment such as a TV screen, radio, or hard copy newspaper.

Gen Z's status as digital natives dovetails nicely into higher education trends where technology is concerned. As Manning-Ouellette and Black (2017) noted, "As online education offerings are extended, more students organizations are increasingly interested in the effectiveness of online learning compared to a traditional classroom." Given the impact of the ongoing Covid pandemic on higher education vis-à-vis a massive, rapid expansion of video conferencing and web-based classrooms, it could be

reasonably speculated that Gen Z is uniquely qualified to perform well in such an environment.

Seemiller and Grace (2017) noted an immediacy element that should be kept in mind with regard to how Gen Z prefers to learn. They quoted one Gen Z student who said they "need to be actively doing the learning to obtain the most information" (p. 22). They also described Gen Z students as wanting to be able to immediately apply what they learn to real-life situations. Although an inclination towards applied learning is not unique to Gen Z, Seemiller and Grace noted two attributes that were specific to this generation. Before attempting to apply something they learn, Gen Z prefers to watch someone else apply it. Second, these students want to know about the broader applications of what they learn. They want to be able to apply learnings beyond the context of a given lesson. These inclinations could be critically important to educators interested in news media literacy. These findings indicate that NML education programs need to include clear, repeated guidance on 1) how the NML skills being taught can be applied quickly; and 2) the utility of those skills in multiple contexts. Also, the aforementioned inclination to see someone else do a task before attempting it themselves suggests that a case study approach could be beneficial in the early stages of an NML education programs. Case studies and practical examples could demonstrate the challenges faced by people with poor news media literacy skills and the advantages enjoyed in multiple settings by those who are more competent in that regard.

Schwieger and Ladwig's (2018) aforementioned meta-analysis included recommendations for faculty and administrators in higher education who want to make their programs more appealing to Gen Z. Because their analysis revealed that Gen Z

students are “future focused and driven” (p. 51), colleges and universities need to get the attention of prospective applicants early in the decision-making process. Thus, they included a recommendation that higher education institutions get more involved in high school events such as competitions corporate initiatives at that level, and school visits. This recommendation is particularly relevant to educators interested in news media literacy efforts as a number of such programs are offered at the high school level. Accordingly, NML education programs could be staged concurrently for high school juniors and seniors as well as college freshman and sophomores.

The digital capabilities and competencies possessed by Gen Z are quite important in general and in terms of news media consumption. As Brown (2016) noted, undergraduates are being bombarded with communications daily. They constantly receive messages from more diverse sources than any generation before. The fact that they are digitally savvy does not mean problems do not exist. Gen Z undergraduates can experience difficulty making sense of these messages, particularly when they are presented with conflicting information. Social media participation exemplifies both the opportunity and potential problems in this regard. Whether it involves news or other content, undergraduates using social media have opportunities to express themselves and explore the world that their parents could barely imagine. However, the staggering amount of information involved places a significant burden on undergraduates, who increasingly have to make smart choices regarding what content they focus on. This dynamic is especially applicable for Gen Zers trying to navigate today’s fragmented news media landscape.

These challenges could serve as disincentives to engage digitally, but they are counterbalanced by another phenomenon that is known by the acronym FOMO – fear of missing out. Strong (2016) noted that this phenomenon, which became prominent enough by 2013 to be added to the Oxford English Dictionary, is the "anxiety that an exciting or interesting event may be currently be happening elsewhere" (para. 8). The phenomenon of FOMO could drive Gen Z members go online more frequently, and that could drive additional media consumption on their part.

Media Use and NML Among Gen Z and Younger People

Mohr and Mohr (2017) pointed out one attribute of Gen Z that could portend well for their ability to effectively navigate media landscapes online. Describing the generation as "problem solvers" (p. 88) who prefer to work on their own, they said Gen Z students are inclined to work online in solitary efforts to overcome challenges. They further noted that they appreciate the challenge of puzzles. This description was given in the context of education and learning in general; but if true, it could bode well for efforts at news media literacy education, which would equip them with the skills that they need to navigate and synthesize the complex, "jigsaw" (P.88) mosaic that is news media content online.

Like any group, media use has a significant impact on Generation Z. Many scholars have voiced concerns about these effects. Brown (2006) urged that media literacy be taught to adolescents. citing health concerns. She argued that bolstering awareness of how media products are developed and delivered can help youth become smarter consumers of such products and thus, hopefully, less likely to engage in some of the unhealthy behaviors promoted in the media. She also noted an important aspect of

media literacy; while some approaches to improving media content focus on the supply side (i.e., efforts to make media providers change their content), she advocated approaching media literacy efforts from the demand side. She explained:

> We certainly shouldn't give up trying to persuade the media to provide healthier content for young audiences. Given the barriers to significant change in content, however, it seems prudent to look for other ways to reduce the potentially harmful effects of the media on adolescence health. Media literacy is a potentially fruitful strategy. (p. 459)

Although Brown's comments were specifically geared towards health concerns, they can be applied to media literacy broadly and news media literacy specifically. As noted earlier in this chapter, there are numerous, tremendous pressures on news media providers to engage in behaviors and provide content that will allows them to remain financially viable in a digital and social media age. Doing so, while sometimes lucrative, can result in the production of products that fail to meet journalistic standards that were adhered to in the pre-Internet age. Since those pressures are unlikely to abate in the near future, approaching the problem of news media literacy from the demand side may be the most effective strategy in the near term for addressing the problem of media misinformation. That said, Brown also noted that media literacy education efforts in the United States are hampered because of a lack of reliable measures that can be used to gauge the effectiveness of such interventions.

The lack of such a measure is not because of a lack of scholarly efforts in related areas. Numerous studies exist involving news media use among Gen Z. For example, Watson (2020a) provided a detailed breakdown of how Gen Z gets its news. Not

surprisingly, social media and digital sources dominated the responses. Sixty-one percent of the Gen Z respondents said that they get news from social media on a daily basis. The next closest daily source, online-only new sites, rated at 23%. Radio (21%), cable news networks (17%) and network news (16%) were the only other media types that secured double-digit percentages in the survey. Newspapers, once the mainstay of American journalism, tied for last in the survey at 6%. Worse still for newspapers, when asked what media types they never get news from, Gen Z respondents chose newspapers at a rate of 52%. Newspapers were the leader in that category. Podcasts also fared very poorly in the survey, as they were cited by only 6% of respondents as a daily source of news. Podcasts were also cited by a majority of respondents (50%) as being a media type that they never use.

Other research supports these findings with regard to Gen Z‘s inclination to get news from social media channels. A multinational study by the Reuters Institute for the Study of Journalism (“Social Media”, 2020) found that more than one-third of respondents (38%) use social media to access news content. A report from Morning Consult (“Understanding Gen Z”, 2019) said 49% of Gen Z members get their news from social channels. The same study noted several news media outlets that are popular with this generation. They included some traditional outlets like Fox News, ABC News, CNN and *The Daily Mail*. However, they also included a number of digital-first outlets such as Buzzfeed News and Vice Media. Although the traditional news media outlets cited here are popular with Gen Z relative to other outlets, these channels are not nearly as popular with this generation as they are with older Americans. For example, 23% of Gen Z respondents said that they get news at least weekly from ABC News. But a much greater

share of older adults (37%) get news from ABC News. Conversely, digital-first news publications were much more popular with Gen Z than they with older generations. Twenty-seven percent of Gen Z respondents said they get news at least weekly from Buzzfeed News, whereas roughly half of older respondents (14%) said the same.

In terms of consumption devices, smartphones are Gen Z's most popular way to access news media outlets (Kalogeropoulos, 2019). In one study across 10 countries including the United States, 45% of people 18-24 said they use smartphones to get their news in the morning. Smartphones were used for that purpose by 39% of people 25-34. The same study also echoed the primacy of social media as a source of news information, with 57% of respondents 18-24 saying they use social media to get news in the morning; 43% of people 25-34 said the same.

Whether via social media channels or by other means, Gen Z is consuming large quantities of news content. This leads back to the question of how well they can navigate, interpret and use this content. Maksl et al. (2015) surveyed 508 high school students to determine their news media literacy levels. In doing so, they found that the students with higher NML levels were more intrinsically motivated to be consumers of news, more skeptical of the news content they encountered, and possessed a better grasp of current events then the other participants in the study.

Hobbs et al. (2013) conducted a pilot study among high school students who filled out a questionnaire as they completed a video production course in fall 2011. Their results indicate that possessing a positive attitude concerning news, current events and journalism is the best predictor of a student's intent to become civically engaged.

Schmidt (2015) conducted both a survey of 312 college student newspaper staffers along with a content analysis of 128 online student newspapers. In the survey, students self-reported strong media literacy competencies. However, the NML scale that was used to test these students indicated that they had limited competencies in this regard. This latter measure was done using an NML scale developed by Ashley et al. (2013).

Vraga and Tully (2016) conducted a web-based survey in spring 2014 involving 831 participants at three American universities. Participants were recruited and categorized based on whether or not they previously participated in media education classes. The purpose of the study was to determine how participation in such classes might impact the way they process messages received while viewing a political program. The survey exposed students to a political service announcement immediately before viewing the political program. The findings suggested that students' processing of that political program was conditioned by whether or not they participated in media literacy education prior to the experiment.

Hoffman (2016) used a convenience sample of 370 journalism students at three colleges to measure how social media usage impacted NML levels. His hypotheses asserted that high levels of social media participation would correlate to high NML levels. However, no significant correlations were found in this regard. Notable among the findings was the fact that users who displayed high levels of participation on Twitter exhibited lower emphasis on the use of professional news sources.

In a study involving 21 young adults ranging from late teens to late 20s, Edgerly (2017) found that the participants tended to look for current events information by

employing one of two strategies. Either they made direct use of news media, or they avoided news media in favor of other information alternatives such as non-news media sources online and family members. A common element throughout the results was the skepticism that participants said was needed when navigating the modern mediascape.

Maksl et al. (2017) conducted a web survey of 545 college students to determine the effects of a news literacy course on student NML levels as well as knowledge of current events and motivation to consume news. The results showed that participants in the news literacy course had higher levels in all three areas as compared to students who did not take the course, and that the effect of the course did not diminish with the passage of time. This study is noteworthy as the results, per the authors, further validated the NML scale used both in the Maksl et al. (2015) study and the study described in the following chapters.

Tully and Vraga (2018) conducted a panel study examining what predispositions and other predictors might predict growth in NML over the course of a semester. The measures in the study included NML, political views, and NFC as well as party affiliation. The study hypothesized that greater gains in NML would be tied to a stronger Media Locus of Control and higher NFC. The first part of the hypothesis generated mixed results; the study found that Media Locus of Control does contribute to NML, but its impact was secondary to other factors. But the second part of the hypothesis was strongly supported.

A national survey of advertising students was conducted by Kendrick and Fullerton (2019) using an NML scale devised by Vraga et al. (2015). Self-reported levels of news media literacy, knowledge and attitudes were above average. However, 43

percent of the students expressed concerns regarding the quality of what they find in the news media. Respondents who had higher GPAs and more internship experience were found to put a higher value on media literacy than other respondents.

Despite all this scholarship examining NML levels among young people and college students, there is little quantitative research that specifically looks at how the NML levels of journalism students compare to college students in general. A Schmidt (2015) study examined NML levels among journalism students. However, his results are arguably outdated given that he used a scale developed by Ashley et al. (2013), and Ashley and his fellow scholars later developed the new NML instrument for Maksl et al. (2015). That said, the 2015 measure was used in a survey of journalism students – Maksl et al. (2017) – but that study examined the effects of a news literacy course on NML levels, as opposed to gauging the relative NML levels of journalism students vs. other disciplines.

As noted earlier, the field of journalism is undergoing a difficult, transformational period, and this makes NML an increasingly critical competency for consumers of news and reporters alike. As Maksl et al. (2015) noted, improving news media literacy is "partly a matter of economic survival, a way of sustaining demand for the type of content professional journalists provide" (p. 29). This raises the question of whether or not the journalists of the future are possessed of the same high NML levels that they might wish to see in their audiences.

Summary

This chapter examined the role of journalism in society, the challenges faced currently by American journalists and news media organizations, the critical importance

of media literacy in the current environment, different attributes of Generation Z, and media usage among Gen Z. The chapter also looked at literature on news media literacy levels in the general public and younger people. The following chapter describes the methodology used in this quantitative study examining the news media literacy levels among students majoring in journalism vs. other college students.

CHAPTER III

METHODOLOGY

Chapter Two provided context on the importance of media literacy in the current news/journalism environment in the United States. This chapter describes the design of this study, which tested the media literacy levels of undergraduate students at two institutions. The sections below explain the research perspective, research context, participants, procedures and data collection, as well as the statistical tests done as part of data analysis.

General Research Perspective

This study used a quantitative survey methodology to collect data that addressed the research question and hypotheses found later in this chapter. As such, this study's foundation is an objectivist epistemology, and its theoretical perspective is post-positivist in nature.

Epistemology and Theoretical Perspective

As Crotty (1998) explained, each of the basic elements of the research process inform the one that follows. Epistemology, or the theory of knowledge and how fact is distinguished from belief, informs the theoretical perspective. An objectivist epistemology is consistent with the idea that there is an objective reality that exists in relation to the phenomenon being studied, one that is independent from the researcher

(Crotty, 1998). Objectivism "holds that meaning, and therefore meaning for reality, exists as such apart from the operation of any consciousness" (p. 8). Put more simply,

objectivism holds that objective truth exists. That said, there are limitations on any researcher's ability to measure reality accurately and objectively – hence, the post-positivism theoretical perspective behind this study. Post-positivism rejects the absolutist view of knowledge taken by positivism, arguing that it is flawed because "we cannot be positive about our claims of knowledge when studying the behaviors and actions of humans" (Creswell, 2014, p. 7). Phillips et al. (2000) similarly noted that a key tenet of the post-positivist theoretical perspective is the view that absolute truth is unattainable, explaining that the evidence that researchers generate through their work is always flawed. In other words, while objective truth does exist, the ability of any researcher to ascertain it with certainty is limited, particularly in the realm of the social sciences.

Research Approach

Given this epistemological view and theoretical perspective, a methodology that follows from it is a quantitative survey approach. A survey design allows the researcher to study a subset of a population to gauge the feelings, beliefs and trends among such a group (Creswell, 2014). The data generated from the sample of students obtained at the subject universities made it possible to generalize the results obtained to the larger student bodies there. The survey was administered electronically via the Qualtrics platform and polled students on a variety of topics related to their news media literacy as well as other attributes and competencies related to the same.

The Research Context

This study sits at the crossroads of two critical issues impacting higher education and American society at large, respectively. One involves the challenges faced by the journalism profession in the United States, which were described in Chapter Two. The other involves the ongoing scrutiny by and doubts held among many people regarding the value of higher education in America today. Rising college costs, mounting student debt, concerns about political bias, and other factors are prompting ongoing scrutiny and criticism regarding the value of a four-year degree (Anonymous, 2014; Morton, 2018; Hope, 2018). In fact, a July 2018 poll by the Pew Research Center found that 61% of Americans said that higher education in America is headed in the wrong direction (Brown, 2018).

In considering these two issues simultaneously, the question arises as to how well one institution that is under increasing pressure – higher education – is preparing students to work in a field that is similarly undergoing increased scrutiny and criticism – journalism. Although news media literacy (NML) is not the only measure of aspiring journalists that can address this question, it is an important one. As Maksl et al. (2015) noted, increased NML is critical to the survival of professional journalism. As such, it was worth examining news media literacy among student journalists in colleges and universities.

Purpose of the Study

The purpose of this study was to explore the news media literacy levels of undergraduate journalism majors and other students at two central U.S. universities through the use of several quantitative survey instruments developed by Maksl et al.

(2015). A key focus of this study was to examine the NML levels of students in journalism and journalism-related programs to determine if differences in their NML levels and those of students in other majors can be identified.

Research Questions and Hypotheses

Based on work done by Maksl et al. (2015), which itself was based on a theoretical framework from Potter (2014), the following research questions and hypotheses were explored in this study. Note that many of the hypotheses below are directional as opposed to null. This is because the hypotheses in the original study (Maksl et al., 2015) were phrased as such; they are repeated in this study to facilitate comparison. Any hypotheses created solely for this study were stated in the null format.

RQ_1: Is there a significant difference in students' Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of News Media Structures for those with lower and higher levels of NML?

H_1: There will be no significant difference in Need for Cognition, Media Locus of Control, and Knowledge of News Media Structures between students with high NML scores and those with low scores.

As noted elsewhere, students were clustered into a high or low NML group based on their responses to the first three instruments of the survey: Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of New Media Structures. Cohesion within those clusters was tested using the Silhouette coefficient (Norusis, 2012). Then, the difference in the clustered mean scores on each instrument were tested for statistical significance using an independent samples t-test ($\alpha = .05$).

RQ_2: What are the effects of NML and demographic variables (i.e., age, gender, ethnicity,

parental education level and class standing) on students' media behaviors and attitude – Motivation for News Media Consumption, News Media Skepticism, News Media Consumption, and Current Events Knowledge.

H_2: Highly news media literate undergraduates will be more intrinsically motivated for news consumption relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

H_3: Highly news media literate undergraduates will be more skeptical of news media relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

H_4: Highly news media literate undergraduates will consume more news relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

H_5: Highly news media literate undergraduates will be more knowledgeable about current events relative to their less news media literate peers when controlling for the demographic variables noted in RQ2.

These measures replicated the tests done during the original study (Maksl et al., 2015). Given the importance of news media literacy, understanding what media behaviors and attitudes are present in undergraduates with higher NML levels is worth examining. Analysis of the results will be done via multiple regression ($\alpha = .05$).

RQ3: What differences exist between highly news media literate undergraduates relative to their less news media literate peers when viewed through various

demographic characteristics – age, gender, ethnicity, parental education level, class standing, and Internet access?

H_6: There will be no relationship between age and placement in either news media literacy group.

H_7: There will be no relationship between gender and placement in either news media literacy group.

H_8: There will be no relationship between ethnicity and placement in either news media literacy group.

H_9: There will be no relationship between the educational level of respondent's parents and placement in either news media literacy group.

H_{10}: There will be no relationship between class standing and placement in either news media literacy group.

H_{11}: There will be no relationship between Internet access reported by students and placement in either news media literacy group.

The original study (Maksl et al., 2015) found differences in placement in the high and low NML groups based on age, ethnicity, race and parental education level, but not gender. These relationships were examined as part of this study as well. In addition, a new measure on the respondents' Internet access was added. Within some demographic variables like age and ethnicity, grouping of responses was done to facilitate statistical testing on these hypotheses. Analysis of the results was done via Chi-square or Goodman and Kruskal's gamma coefficient, depending on whether or not the variable in question could reasonably be treated as ordinal. ($\alpha = .05$).

RQ4: What is the relationship between news media literacy level for undergraduates who major in a journalism-related field and those who do not?

H_{12}: Undergraduates majoring in journalism-related fields will not have higher NML scores than other students.

The final hypothesis reflects one of the key interests of this study – namely, the possibility that students in journalism-related fields possess greater NML than their counterparts in other majors. Analysis of these results was done via Chi-square ($\alpha = .05$).

Institutional Context

Data were collected at two institutions:

- A midsized land grant university in the central United States. This institution in question is a nationally ranked research university with approximately 20,000 undergraduate students as of fall 2020. In addition to its other offerings, the institution has a School of Media and Strategic Communications that offers majors relevant to this study.
- The second institution is a midsized regional university located in the same state as the first university. It is a teaching-focused institution with approximately 12,000 undergraduate students as of fall 2020. Its offerings include a Mass Communication Department that offers a major relevant to this study.

Participants

Undergraduate students at the universities described above were solicited for participation in the survey. A total of 1,104 people responded to the survey; when filtered to exclude people outside the target audience and those who did not finish the entire survey, a total of 706 respondents remained.

As a part of the data collection effort, students in journalism-related majors at each school were heavily recruited. This was necessary to ensure a sufficient subsample to allow for comparison of NML levels between undergraduates majoring in disciplines related to journalism and those who are not. At the larger subject university, where the relevant major was Multimedia Journalism, 22 out of 77 majors participated in the study for a participation rate of 28.6% among those majors. At the smaller institution, where the relevant major was Professional Media, 24 out of 206 majors participated in the study for a participation rate of 11.7%. Because of the specific targeting of students in these majors, this meant that the survey, in part, employed purposive sampling. (Etikan et al., 2016).

Instrumentation

A quantitative survey was adapted from Maksl et al. (2015). A copy of the survey is in Appendix B and described in detail on the next page. Although this survey was largely unchanged from the original study, there were some minor differences as well as one significant change.

- Unlike the original poll, this survey began with a straightforward question to determine if respondents were undergraduates at one of the subject universities. People who answered “no” were not allowed to continue further.
- The survey in the original study (Maksl et al., 2015) offered a binary choice when answering the gender question in the demographics section – male or female. That approach is outdated. Accordingly, that question was modified.

- A question about class standing (freshman, sophomore, etc.) was added. The class standing was based on number of credit hours completed (0-30, 31-60, and so on), which was explained in the question.
- A question about Internet access was added. Access was gauged based on responses to a Likert scale statement: "I have reliable access to the Internet most of the time."
- The demographic question about exposure to media or journalism education programs in the original study (Maksl et al., 2015) was replaced with a question about participants' majors. This insertion reflects a key aim of the study.
- Prior to the first instrument on the survey, a block of text was added to clarify the distinction between news media and entertainment media and to define what is meant by "news media". The definition used in the clarification is adapted from the research news website Science Daily ("News media", n.d.).
- A clarifying block of text was inserted at the beginning of instrument 6 (Questions about News Media Consumption). This instrument asked questions about what type of media the respondents consume in a typical day (daily newspaper, TV news, radio news, etc.). Because of the cross-platform nature of most media outlets – for example, a newspaper can be accessed via hard copy, apps, websites and so forth) – the clarifying text provided guidance on how to answer the questions in this instrument.
- Minor grammatical errors in the original instruments were corrected.
- Regarding the significant difference noted above: Instrument 7 (Questions about Current Events Knowledge) in the original study (Maksl et al., 2015) included questions that tested the respondents' grasp of current events using the then-current Pew Research Center's (2012) News IQ Quiz. A newer version was not available

from Pew for this survey. Therefore, an updated version was written for this study using the Pew quiz as a template.

Survey Instruments

Following the required IRB disclaimers and information at the start of the survey, as well as the single screening question to determine if the respondent is enrolled at one of the subject universities, multiple instruments will be used to test respondents in areas relevant to NML. These instruments, described below, were developed for the original study (Maksl et al., 2015) based on research in fields such as psychology, health education and media studies. All descriptions below are from Maksl et al. (2015) unless otherwise noted.

- **Instrument 1: Questions about Need for Cognition.** This section of the survey had five questions and used a five-point Likert scale. The questions in this area were used to determine Need for Cognition (NFC) scores based on the mean of each participant's responses. NFC is a psychological construct defined as "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world" (Cohen, Scotland, & Wolfe, 1955, p. 291). The relevant research behind this instrument is Epstein et al. (1996). When NFC served as a dependent variable, the score was calculated by determining the mean of the five responses from each respondent and then calculating the average mean across all respondents. Numerical coding of responses to each question ensured that high NFC responses received a higher score (i..e, 5) than answers that reflected a low NFC (i.e., 1).

- **Instrument 2: Questions about Media Locus of Control (MLOC).** This section of the survey had six questions and used a five-point Likert scale to measure the extent to which respondents saw themselves as being in control of how (or if) the news media influences them. Higher scores in this area indicated a greater intrinsic MLOC. The relevant research behind this instrument is Wallston et al. (1978). When MLOC served as a dependent variable, the score was calculated by determining the mean of the six responses from each respondent and then calculating the average mean across all respondents. Numerical coding of responses to each question ensured that high MLOC responses received a higher score (i..e, 5) than answers that reflected a low MLOC (i.e., 1).
- **Instrument 3: Questions about Knowledge of News Media Structures.** This section of the survey had 15 multiple-choice questions and measured what respondents knew about the nature of news organizations, how news organizations produce their content, and media effects. The relevant research behind this instrument is Tsfati (2003a, 2003b) and Tsfati & Cappella (2003, 2005). When Knowledge of News Media Structures served as a dependent variable, the score was calculated by determining the total number of correct answers from each respondent and then calculating the average score (number of correct answers) across all respondents.
- **Instrument 4: Questions about Motivations for News Consumption.** This section of the survey had four questions and used a five-point Likert scale. Questions in this area were based on self-determination theory. Higher scores in this area indicated a greater intrinsic motivation to consume news. The relevant research behind this instrument is Koestner et al. (1996) and Vallerand and O'Connor (1989). When

Motivation for News Media Consumption served as a dependent variable, the score was calculated by determining the mean of the four responses from each respondent and then calculating the average mean across all respondents. Numerical coding of responses to each question ensured that high motivation responses received a higher score (i..e, 5) than answers that reflected low motivation (i.e., 1).

- **Instrument 5: Questions about News Media Skepticism.** This section of the survey had eight questions and used a five-point Likert scale. This instrument measured how respondents felt about news media fairness, accuracy, completeness of reporting, and the like. Responses were used to compute a mean score for each participant. The relevant research behind this instrument is Tsfati (2003a, 2003b) and Tsfati & Cappella (2003, 2005). When News Media Skepticism served as a dependent variable, the score was calculated by determining the mean of the eight responses from each respondent and then calculating the average mean across all respondents. Numerical coding of responses to each question ensured that high skepticism responses received a higher score (i..e, 5) than answers that reflected low skepticism (i.e., 1).
- **Instrument 6: Questions about News Media Consumption.** This section of the survey had 13 questions. Questions 1, 3, 5, 7, 9 and 11 asked a yes-no question about whether each respondent consumes a certain type of news media (daily newspaper, TV news, etc.). If a respondent answered "yes" to any of these odd-numbered questions, a follow-up question was displayed asking the respondent how many minutes they spent consuming that media type on a typical weekday. [A "no" answer to an odd-numbered question will result in an answer of "0 minutes" for the follow-up

question.] The 13th question asked the respondent for examples of media outlets they consumed via social media platforms. This instrument was adapted from the original survey developed by Maksl et al. (2015). When News Media Consumption served as a dependent variable, the score was either calculated as a binary (for the yes/no questions) or by determining the mean time spent by respondents on each media type.

- **Instrument 7: Questions about Current Events Knowledge.** This section of the survey had seven multiple-choice questions. This instrument was developed using the Pew Research Center's 2012 News IQ Quiz, which was used in the Maksl et al. (2015) study, as a template since a newer version was not available from Pew for use. Once drafted, the instrument were evaluated by multiple faculty members in the relevant program at the larger subject university to evaluate its accuracy and difficulty. When Current Event Knowledge served as a dependent variable, the score was calculated by determining the total number of correct answers from each respondent and then calculating the average score (number of correct answers) across all respondents.
- **Instrument 8: Questions about Demographics.** This section of the survey gathered information about respondent attributes like age, ethnicity, class standing, and so on.
- After the final instrument, each respondent had the option to provide their name and email address if they wanted to be entered in a drawing for the survey's incentive prizes.

Reliability and Validity

The original study that this survey is based on was published in a scholarly journal on media literacy (Maksl et al., 2015). That said, reliability testing was done on

all means score-based instruments in this updated survey following data collection. Because the original study (Maksl et al., 2015) targeted high school students in a different part of the country, validation of the survey's use with a new population was warranted. Moreover, the apparent failure to conduct reliability testing on one of four relevant instruments in the original study needed to be addressed in this study. Once data were collected, reliability analysis was conducted using SPSS. The reliability of all four instruments that generated mean scores was evaluated using Cronbach's α:

- Need for Cognition
- Media Locus of Control
- Motivations for News Media Consumption
- News Media Skepticism

Per Field (2018), a value of .7 or .8 is acceptable on such tests; scores substantially lower than .7 likely indicate that an instrument is not reliable. Results of this testing are noted near the beginning of Chapter Four.

Procedures and Data Collection Instruments

Data were collected early in the fall 2020 semester. The original Maksl et al. (2015) survey was conducted via telephone, but this survey was administered via an electronic survey on the Qualtrics platform. In addition to the greater time efficiency of an online approach, an electronic survey was more in line with current surveying practices in academe.

Because of the requirements of the research questions, two different samples were drawn. The first was a random sample needed to address the first three research

questions; the second was a purposive sample needed to address the fourth research question.

Random Sample (RQs 1-3)

With the assistance of the relevant institutional offices, a random sample of 4,000 undergraduate student email addresses at the larger university was generated (out of an undergraduate student body of 20,000). At the smaller university, a sample of 3,800 undergraduates (out of 12,000) email addresses was obtained. Those groups were then solicited via email blasts issued by the subject institutions. The email contained a link to the survey on the Qualtrics platform along with a short solicitation asking students to participate. The email blast was scheduled for three rounds at each university; the third round at the smaller institution was cancelled due to a stronger-than-expected response to the first two solicitations there.

At the larger institution, 393 undergraduates responded to the survey, including 291 undergraduates who completed the survey, for response rates of 9.8% raw and 7.3% completed. At the smaller institution, 634 undergraduates responded to the survey, including 415 undergraduates who completed the survey, for response rates of 16.7% raw and 10.9% completed.

Modest cash incentives were used to drive participation among undergraduates at both schools. Each participant had the option to provide his or her name and email address at the end of the survey to participate in a drawing for one $100, one $50, or one of six $25 prizes. After completion of the survey, winners were chosen via the use of a random number generator cross-indexed against alphabetical spreadsheet of the entrants' names.

Purposive Sample (RQ 4)

A separate effort was made to promote participation among students in the journalism-related disciplines noted earlier. This was necessary to ensure that an adequate number of responses from journalism students to enable comparisons related to the fourth research question and its hypothesis:

RQ4: What is the relationship between news media literacy levels for undergraduates who major in a journalism-related field and those who do not?

H_{11}: Undergraduates majoring in journalism-related fields will not have higher NML scores than other students.

So, a purposive sample of students in journalism-related fields was drawn as a subset of collection efforts. To generate a high response rate within this subset, the researcher spoke briefly to relevant classes at the smaller university to encourage their participation in the survey outside class. For the larger university, the researcher solicited support from relevant faculty, who were asked to promote this survey in their classes. In both case, incentives similar to the ones described on the previous page were offered to encourage participation. At the larger subject university, where the relevant major was Multimedia Journalism, 22 out of 77 majors participated in the study for a participation rate of 28.6%. At the smaller institution, where the relevant major was Professional Media, 24 out of 206 majors participated in the study for a participation rate of 11.7%.

Variables

Table 3.1 on the next page describes the variables involved in this study. Note that because of the different comparisons and analyses that were conducted, news media

literacy was an independent variable in research questions one and two but a dependent variable in research questions three and four.

Data Analysis

Once collected via the Qualtrics platform, data were downloaded to the IBM Statistical Package for the Social Sciences (SPSS) version 26 for analysis. The analysis generated inferential statistics that were used to examine how the different variables interact with one another.

Table 3.1.

Variables

Variable	Type	RQ/Hypothesis	Analysis
News media literacy (NML) levels	Independent, dependent (depending on the analysis below)	N/A (pre-test)	Two-step cluster analysis, Silhouette coefficient
Need for cognition (NFC)	Independent	RQ_1, H_1	T-test
Media locus of control (MLOC)	Independent	RQ_1, H_1	T-test
Knowledge of news media structures	Independent	RQ_1, H_1	T-test
Motivation for news consumption	Dependent	RQ_2, H_2	Multiple regression*
News media skepticism	Dependent	RQ_2, H_3	Multiple regression*
News media consumption	Dependent	RQ_2, H_4	Multiple regression*
Current events knowledge	Dependent	RQ_2, H_5	Multiple regression*
Age	Independent	RQ_3, H_6	Gamma coeff.
Gender	Independent	RQ_3, H_7	Chi-square
Ethnicity	Independent	RQ_3, H_8	Chi-square
Parental education level	Independent	RQ_3, H_9	Gamma coeff.
Class standing	Independent	RQ_3, H_{10}	Gamma coeff.
Internet access	Independent	RQ_3, H_{11}	T-test
Major	Independent	RQ_4, H_{12}	Chi-square

* The hypotheses in these four cases examine the relationship between placement in the higher news media literacy group and scoring higher on these four dependent measures. Multiple regression was done to control for the demographic variables: age, gender, ethnicity, parental education level, class standing and Internet access.

Prior to the bulk of the planned analyses, a two-step cluster analysis was done using survey instruments 1-3. These instruments focused on automatic vs. mindful thought processing (in other words, Need for Cognition), Media Locus of Control, and Knowledge of News Media Structures. Based on this clustering, respondents were placed into one of two groups – high or low – as it relates to their NML. Cluster analysis provided the researcher "with clusters that are as different from each other as possible, with the members within each cluster as similar to each other as possible" (Ammon et al., 2008, p. 34). The cohesion within the clusters was tested via the Silhouette coefficient (Kaufman & Rousseeuw, 1990). Once respondents were clustered, differences in the mean scores of the high and low NML groups on instruments 1-3 (Need for Cognition, Media Locus of Control, and Knowledge of News Media Structures) were tested for statistical significance using an independent t-test to determine if differences between the means two data sets were statistically significant (Field, 2018).

Following this, responses to the next four instruments on the survey were tested to see if placement in the high NML group was a predictor of higher scores on the following measures: Motivation for News Consumption, News Media Skepticism, News Media Consumption, and Current Events Knowledge. The four directional hypotheses under Research Question Two were involved here. As noted earlier, multiple regression testing

was done to control for multiple demographic variables (age, gender, ethnicity, class standing and parental education level).

For research questions three and four, the relationship between each variable and placement in either NML cluster was analyzed to determine if statistically significant relationships existed between any pairing of those variables. A combination of chi-square and gamma coefficient testing was used for these hypotheses as noted in table 3.1. Three of the independent variables in this area – gender, ethnicity and major – must be treated as categorical variables given their nature. As such, Chi-square testing was done on them. However, the other independent variables – age, parental education level and class standing – were ordinal variables in the survey. (Age was ordinal because the extreme values in the age range offered to respondents – "17 and younger", "Older than 25" – made it impossible to treat the data as continuous.) As such, analysis of these three variables was done via gamma coefficients.

For additional information on data analysis. a more detailed table of research methods is located in Appendix C. Results of all the aforementioned tests are detailed in Chapter Four.

Summary

This chapter explained the research perspective, research context, participants, procedures and data collection for this study. The chapter also described the statistical tests that were done as part of the data analysis. Chapter Four reports the results.

CHAPTER IV

FINDINGS

The purpose of this study was to test the news media literacy levels of undergraduate students at two institutions with an emphasis on results involving students in journalism-related majors. As a part of this, the following research questions were posed:

RQ_1: Is there a significant difference in students' Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of New Media Structures for those with lower and higher levels of news media literacy.

RQ_2: What are the effects of NML and demographic variables (i.e., age, gender, ethnicity,

parental education level and class standing) on students' media behaviors and attitude – Motivation for News Media Consumption, News Media Skepticism, News Media Consumption, and Current Events Knowledge.

RQ3: What differences exist between highly news media literate undergraduates relative to their less news media literate peers when viewed through various demographic characteristics – age, gender, ethnicity, parental education level, class standing and Internet access?

RQ4: What is the relationship between news media literacy level for undergraduates who major in a journalism-related field and those who do not?

Hypotheses related to each research question above are noted and addressed later in this chapter.

Each question and its supporting hypotheses were subjected to quantitative data analysis via the Statistical Package for the Social Sciences (SPSS) version 26. Testing included multiple regression, t-tests, Chi-square statistics, cluster analysis, and other measures noted in the sections that follow. Prior to a review of those analyses, this chapter will provide a descriptive analysis of the sample for this study and the results of reliability testing that was done on survey instruments.

A quantitative survey exploring news media literacy levels among high school students by Maksl et al. (2015) was adapted for use in this study, which looked at undergraduate students in two universities. A copy of the survey used in this study is provided in Appendix B and described in detail in Chapter Three. Although this survey was largely unchanged from the original study, there were some differences. These differences were also described in the Chapter Three.

Sample Analysis

Undergraduate students at two central U.S. universities were recruited during the fall 2020 semester for participation in an electronic survey administered via the Qualtrics platform. A random sample of students at each university was targeted via email solicitations. A total of 1,104 people responded to the survey. These responses were filtered to exclude people who were not undergraduate students at one of the two institutions. The results were further filtered to eliminate responses from people who did

not complete the survey. Given the robust response to the survey, it was possible to take these steps and still maintain a large sample. After these steps, a total of 706 respondents remained. Note that, despite this elimination of partial responses, there were still some questions that students chose not to answer across the 706 surveys. Hence, the response figures to some parts of the survey vary from the 706 figure noted here. The rationale for keeping these 706 surveys, some of which had missing a small number of responses, while discarding all surveys from people who did not get to the end was the placement of the demographic instrument. All but one of the analyses in this study depended upon comparison among groups based on certain demographics. The demographic instrument was the last item on the survey. Surveys that were not completed to the end were set aside because they were badly incomplete in terms of demographic responses. The 706 surveys that were retained for analysis did not suffer from this defect.

As a part of the data collection effort, students in journalism-related majors at each school were heavily recruited. This was necessary to ensure a sufficient subsample to allow for comparison of NML levels between undergraduates who were majoring in disciplines related to journalism and those who were not. At the larger university sampled, where the relevant major was Multimedia Journalism, 22 out of 77 majors participated in the study for a participation rate of 28.6% majors. At the smaller institution sampled, where the relevant major was Professional Media, 24 out of 206 majors participated in the study for a participation rate of 11.7%.

The responses from the two universities were treated as a cross-sectional sample for analysis purposes. This was done for several reasons. First, this ensured the largest possible sample size for each of the test measures employed. Also, this approach was

particularly helpful when analyzing differences between the journalism subsample and the larger respondent base. A total of 46 students in journalism-related majors responded at the two schools combined for a subsample of 6.51% of the overall sample. Splitting that group up would yield subsample sizes that would be less than optimal for analysis purposes. For both these reasons, the samples from the two school were analyzed collectively.

Below is a breakdown of key demographics among the overall respondent base after the aforementioned filtering of responses was done (n=706). Where totals below deviate from the 706 figure, this denotes a demographic screening question where some respondents failed to provide a reply.

Table 4.1.

Respondents by University

Institution	Respondents
Land Grant University	291
Regional University	415
Total	706

Table 4.2.

Respondents by Age
(M = 20.78, SD = 2.51)

Age	Respondents
17 and under	2
18	141
19	115
20	117
21	103
22	66
23	36
24	20
25	15
Older than 25	74
Total	689

Table 4.3.

Respondents by Class Standing
(M = 2.61, SD = 1.16)

Class standing	Respondents
1-Freshman	177
2-Sophomore	139
3-Junior	172
4-Senior	218
Total	706

Table 4.4.

Respondents by Gender

Gender	Respondents
Male (cis)	203
Male (trans)	5
Female (cis)	469
Female (trans)	2
Nonbinary	14
Prefer Not To Say	11
Total	704

Table 4.5.

Respondents by Ethnicity

Ethnicity	Respondents
African-American	38
Asian/Pacific Islander	29
Indian	2
Latino/Hispanic	67
Multiethnic	20
Native American	52
White	468
Other	30
Total	706

Table 4.6.

Respondents by Major

Major	Respondents
Journalism-Related Majors*	46
All Other Majors**	649
Total	695

* Multimedia Journalism at Land Grant University (22) + Professional Media at Regional University (24)
** Land Grant University (263) + Regional University (386)

Table 4.7.

Respondents by Parental Education Levels
(M = 4.33, SD = 1.61)

Highest Education Level Achieved by Parents	Respondents
1-Less Than High School	25
2-High School/GED	98
3-Some College But No Degree	111
4-Vocational/Technical/Associate/ Community College Degree	76
5-Bachelor's Degree	231
6-Master's Degree	112
7-Doctorate	49
8-Don't Know/Not Sure	4
Total	706

Reliability Analysis

Reliability testing using Cronbach's alpha was calculated on four of the eight instruments on the survey. Regarding the four instruments where it was not calculated, this was because:

- Two of those four instruments used index scales to test respondents on their News Media Structures Knowledge and current events. In both these cases, respondents were simply being tested to provide factually correct answers if they could (i.e., a sum of correct responses).

- A third instrument gathered data about respondents' demographics such as age, ethnicity and so on. Accordingly, reliability testing was not warranted.
- The final instrument was a measure of how much time respondents spent consuming different media types.

The remaining four instruments that were tested for reliability using Cronbach's alpha. The table below notes the results of the reliability testing on those four instruments. For comparison purposes, the reliability scores for each measure in the original study (Maksl et al., 2015) are also provided below. Sample sizes for each instrument below vary slightly; only respondents who answered all questions in each instrument were included in the reliability analysis for that instrument.

Table 4.8.

Reliability Analysis Statistics

Instrument	No. of Qs in Instrument	Current Study (α)	Maksl et al. (2015) (α)
Need for Cognition (n=703)	5	.737	.780
Media Locus of Control (n=700)	6	.573	.635
Motivations for News Media Consumption (n=705)	4	.582	Not reported
News Media Skepticism (n=702)	8	.853	.701

As noted in table 4.8, reliability testing for two instruments – Need for Cognition and News Media Skepticism – produced acceptable results. Per Field (2018), a value of .7 or .8 is acceptable on such tests; scores substantially lower than .7 likely indicate that an instrument is not reliable. Notably, response data from the News Media Skepticism instrument had a higher reliability in the current study than it did in the original. However, the reliability results for Media Locus of Control and Motivations for News Media Consumption were less than ideal. Several factors may have contributed to these lower scores:

- The Media Locus of Control instrument failed to produce satisfactory reliability scores in the original study, so the result in this new study is not necessarily surprising.
- The Motivations for News Media Consumption instrument reliability score was not reported in the original study, so it is possible that a less-than-optimal reliability score occurred on the original study.
- Both instruments had an extremely low number of questions in them (six and four, respectively). A low number of factors can contribute to less-than-optimal scores on Cronbach's α. (Tovakal & Dennick, 2011).
- For reasons noted later in this chapter, one of the questions on the Media Locus of Control instrument is worded badly. This could contribute to problems with instrument reliability.
- Finally, the timing of the survey has to be considered here. The fact that data were collected at the height of the 2020 presidential election, when scrutiny and criticism of news media was on prominent display, could have impacted the reliability of these measures. For example, as has been the case over the last four years, a great deal of the rhetoric from the Trump campaign involved virulent criticism of the news media. Considering that Oklahoma is a strongly pro-Trump red state, it is possible that respondent attitudes towards the news media could have been affected by such rhetoric. If so, their answers to questions about journalism and the related reliability scores could have been impacted, perhaps dramatically.

Clustering Procedures

The next analysis was the clustering procedure. An a priori division of the sample was done to break it into two clusters based on news media literacy scores. These NML scores were based on the measure developed by Maksl et al. (2015) using respondents' answers on three instruments exploring respondents' knowledge and perspectives that impact their ability to navigate the news media landscape:

- **Need for Cognition (NFC)**: This instrument had five questions and used a five-point Likert scale. The questions were used to determine Need for Cognition scores based on the mean of each participant's five responses. NFC is a psychological construct defined as "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world" (Cohen, Scotland, & Wolfe, 1955, p. 291). The relevant research behind this instrument is Epstein et al. (1996). Numerical coding of responses to each question ensured that high NFC responses received a higher score (i..e, 5) than answers that reflected a low NFC (i.e., 1).
- **Media Locus of Control (MLOC)**: This instrument had six questions and used a five-point Likert scale to measure the extent to which respondent saw themselves as being in control of how (or if) the news media influences them. A higher mean score to these six questions indicated a greater intrinsic MLOC for that respondent. The relevant research behind this instrument is Wallston et al. (1978). Numerical coding of responses to each question ensured that high MLOC responses received a higher score (i..e, 5) than answers that reflected a low MLOC (i.e., 1).

- **Knowledge of News Media Structures**: This section of the survey had 15 multiple-choice questions and measured what respondents knew about the nature of news organizations, how news organizations produce their content, and media effects. Each respondent's score was calculated by determining the total number of correct answers. Higher scores equated to greater knowledge in this area. The relevant research behind this instrument is Tsfati (2003a, 2003b) and Tsfati & Cappella (2003, 2005).

Using a combination of scores in all three areas as an aggregate measure to determine each respondent's news media literacy, a two-step cluster analysis was done in SPSS to group students into high vs. low NML clusters. Cluster analysis is based on the idea that individuals or objects in the same data set can be grouped together based on how similar certain cases are to each other while being different from other cases (Norusis, 20212). The two-step cluster analysis in this study was based on the procedure used in the Maksl et al. (2015) study, which adopted media literacy concepts from Potter (2004) for use in examining news media literacy. Potter's model asserted that individuals who are media literate "think deeply about their media experience, believe they are in control of media's influence, and have a high degree of basic knowledge about media content, industries and effects" (Maksl et al., 2015, p. 33) – hence the use of the three variables in question. The cluster analysis run on SPSS used each respondent's mean score on those variables to group people into the two clusters. A synopsis of the results is below:

- All but one of the results in table 4.9 below are analyzed in greater detail under research question 3 later in this chapter. That elaboration includes explanations for the grouping of certain demographic variables used in table 4.9. The one set of results

not elaborated on later in this chapter is the breakdown by university. As explained earlier in this chapter, the breakdown within that group was deliberately eschewed.

- NML clustering results on students majoring in journalism-related fields is addressed separately in research question 4.

Table 4.9.

Respondents' NML Results with Demographic Breakdowns

Respondent Group	High News Media Literacy Cluster	Low News Media Literacy Cluster	Total in Group
All Respondents	330	359	689
Land Grant University	137	147	284
Regional University	193	212	405
Younger respondents (up to 20)	162	203	365
Older respondents (21 and older)	161	147	308
Freshman	67	104	171
Sophomores	63	74	137
Juniors	87	80	167
Seniors	113	101	214
Males (cis)	124	74	199
Females (cis)	184	273	457
Marginalized Genders	21	11	32
White Respondents	235	223	458
Non-White Respondents	95	136	231
Less Than High School	5	20	25
High School/GED	38	59	97
Some College But No Degree	45	64	109
Vocational/Technical/Associate/ Community College Degree	31	44	75
Bachelor's Degree	124	101	225
Master's Degree	58	47	106
Doctorate	26	22	48
Don't Know/Not Sure	2	2	4

Once the clusters were generated, their cohesion of the two clusters involving all respondents (n = 706) was analyzed via a Silhouette coefficient (0.5). Though 0.5 is not ideal, it is in the fair range (Kaufman & Rousseeuw, 1990). Worth noting is the fact that the Silhouette coefficient in the current study was slightly higher than the original Maksl et al. (2015) study (0.4).

Research Question One

The first research question sought to examine if respondents in the higher NML cluster would score higher on the Need for Cognition, Media Locus of Control, and Knowledge of News Media Structures instruments. As part of this analysis, a variable was created for each instrument that combined all responses from each student on that instrument to generate either a mean score (for Need for Cognition and Media Locus of Control) or an index score (for Knowledge of News Media Structures). Prior to running the analyses of these variables via an independent samples t-test, the assumptions of that test were reviewed as they relate to the data to be analyzed.

- The data for all three measures involved continuous scales (two means and one index score).
- The data for all three measures were collected using lists of randomly selected email addresses of undergraduates that were provided by the respective institutions. However, it should be noted that a small number of respondents to the survey (students in journalism-related majors, which accounted for roughly 6.5% of the overall sample) were more heavily recruited than other students.

- When plotted, the data for all three measures fell along a long a normal, bell-shaped distribution curve. Normality was further confirmed via the Shapiro Wilks test ($p = .000$ on all three measures).
- The sample size for each of the three measures ($n=689$) was adequately large for analysis.
- In all three cases, the data did not meet the final assumption for homogeneity of variance. The results of the Levene's test were statistically significant in all three measures.
    - Need for Cognition ($p = .008$)
    - Media Locus of Control ($p = .016$)
    - Knowledge of News Media Structures ($p < .001$)

The lone hypothesis under this research question asserted that average mean scores on each instrument would not differ significantly between the two NML clusters. However, as illustrated in table 4.10 and the bullets below, this null hypothesis was rejected. Independent t-tests on the mean differences between the two clusters in each area were statistically significant ($p<.05$). Because the assumption regarding homogeneity of variances was not met, the results of the t-tests below do not assume equal variances; this is also why the degrees of freedom below are not whole numbers. Hedge's g was used to calculate effect sizes since the size of the samples and the standard deviations for each cluster were different. Effects sizes using either Cohen's d or Hedge's g that exceed .08 – which is true in all three cases below – are considered large (Cohen, 1977).

- Need for Cognition: ($t[680.66] = -20.36$, $p < .001$, $g = 1.54$)

- Media Locus of Control: ($t[684.91] = -11.72$, $p < .001$, $g = 0.88$)
- Knowledge of News Media Structures: ($t[653.93] = -23.33$, $p < .001$, $g = 1.77$)

Among the three measures, the difference in average scores between the two groups for Knowledge of News Media Structures was particularly noteworthy. Both the low and high scores on this measure exceeded the marks in the original Maksl et al. (2015) study; that is to be expected given the difference in samples (high school students vs. college students). What makes the result noteworthy in this study is the gap between the high and low clusters. Relative to the scales used, the gap between high and low cluster scores on the Knowledge of News Media Structures variable is markedly higher than the other two. The gap between the other two variable scores was between 9% and 17% (relative to their scales), whereas the gap on the Knowledge of News Media Structures scores was nearly 30%. This suggests that this variable may be a more robust measure of the differences in news media literacy than the other two factors.

Table 4.10.

Mean (Standard Deviation) Scores on Clustering Variables

Instrument	High News Media Literacy Cluster (n=330)	Low News Media Literacy Cluster (n=359)
Need for Cognition	4.10 (SD = 0.47)	3.29 (SD = 0.57)
Media Locus of Control	3.81 (SD = 0.54)	3.35 (SD = 0.47)
Knowledge of News Media Structures	11.39 (SD = 2.09)	6.94 (SD = 2.87)

Research Question Two

The second research question examined how different NML levels would impact students' scores on four separate instruments that measured media behaviors and attitude (the dependent variables). Those instruments were 1) Motivation for News Media

Consumption, 2) News Media Skepticism, 3) News Media Consumption, and 4) Current Events Knowledge. As part of the analysis, a variable was created for each instrument that combined all responses from each student on that measure to generate either a mean score (for Motivation for News Media Consumption and News Media Skepticism) or an index score (for News Media Consumption and Current Events Knowledge). Multiple regression was used for each dependent variable to control for student demographics (i.e., age, class standing, parental education level, ethnicity and gender).

Several variables were created or modified to facilitate testing of these demographics:

- Age: A dichotomous grouping of the age values was created as part of a new variable that contrasted younger respondents (20 and younger) vs. older respondents (21 and older). This grouping addressed the problem of small cell sizes that affected several values under the age variable. The age variable was not continuous originally because of the use of two categorical values ("17 or younger", "older than 25"), so this new variable was consistent in that regard.
- Class standing: Unlike the dichotomous age variable created above, class standing was not a binary variable – it had four values. Accordingly, dummy variables were created to facilitate multiple regression testing.
- Parental education levels: Dummy variables were also created to test this non-binary variable.
- Ethnicity: A dichotomous grouping of the ethnicity values was created as part of a new variable that contrasted White undergraduates (who were the overwhelming majority of respondents) vs. all other (non-White) respondents. This was consistent

with the treatment of this variable in the Maksl et al. (2015) study, which thus facilitates comparisons. This dichotomization also addressed the problem of small cell sizes that affected several values under the ethnicity variable.

- Gender: Six potential responses for gender were provided on the original survey: male (cis), male (trans), female (cis), female (trans), nonbinary, and "prefer not to answer". Because the combined responses to all but two of the groups (cis males and cis females) were exceptionally low (32 responses combined), those four values were grouped into a single factor labeled as "Marginalized" for analysis purposes. Admittedly, inclusion of the "prefer not to answer" responses in this new value is debatable. But given the ongoing debate in society and academe regarding gender definitions, an assumption was made for testing purposes that people who chose not to answer did so because they likely aligned with some gender identity outside the ones listed on the survey. As with all other variables with more than two values, dummy variables were created for this demographic.
- Major: A final dichotomous variable was created using a survey question that asked what major each student was pursuing. The new variable isolated students in journalism-related majors (n=46) from all other (non-journalism) respondents to facilitate testing of responses from the former group.

Prior to running the analysis, the assumptions of multiple regression were reviewed as the relate to these tests and variables:

- There were at least two independent variables that are categorical, ordinal or continuous.
- There were at least 20 cases per independent variable.

- One assumption is that a linear relationship exists between the dependent and independent variables. However, because a linear relationship cannot exist between categorical variables, this assumption is only applicable to two measures in the analyses below - total media time spent and news media consumption via social media. Scatter plots confirmed that this assumption was met in both cases.
- A normal distribution of residuals existed in this data. Histograms and P-P plots were generated to confirm this in all but two cases. Those two cases are noted in the results that follow.
- The independent variables were not highly correlated with each other. This assumption was tested via VIF values. VIF values above 10 are problematic (Heckman, 2015), but no such values were found.
- The variance of residual values is similar across the predicted values. Scatter plots of residuals vs. predicted values were done to confirm this assumption.

Motivation for News Consumption

For this measure and the three that follow, directional hypotheses were offered. As noted in the previous chapter, this was done to facilitate comparisons in the next chapter with the corresponding hypotheses in the original Maksl et al. (2015) study. This instrument consisted of four questions using a five-point Likert scale. The hypothesis offered on the first measure posited that highly news literate undergraduates would be more intrinsically motivated for news consumption relative to their less news media literate peers when controlling for the demographic variables noted earlier.

Table 4.11.

Motivation for News Media Consumption

	B	SE	β	Sig.
Placement in High NML Cluster	.229	.055	.163	< .001
Age (younger: up to 20)	-.009	.076	-.007	.901
Class Standing (Sophomore)	.148	.079	-.084	.062
Class Standing (Junior)	-.020	.080	-.012	.805
Class Standing (Senior)	-.019	.096	-.013	.844
Parental Ed. Level (HS/GED)	.169	.161	.085	.296
Parental Ed. Level (Some college)	.249	.161	.130	.121
Parental Ed. Level (VoTech/Assoc.)	.158	.166	.070	.341
Parental Ed. Level (Bachelor's)	.240	.155	.161	.122
Parental Ed. Level (Master's)	.244	.162	.126	.133
Parental Ed. Level (Doctorate)	.155	.177	.057	383
Ethnicity (Whites)	-.077	.057	-.052	.179
Gender (Cis Females)	.069	.059	.047	.247
Gender (Marginalized)	.038	.129	.011	.772
Journalism Majors	.586	.105	.212	< .001

($F[16,670] = 4.28$, $p < .001$; $r^2 = .095$, adj. $r^2 = .073$)
One value under Parental Ed. Level (Don't know/not sure) was not included

Statistical analysis indicated that this model was a good fit. However, only 9.5% of the variance in motivation was explained by the independent variables. With the exception of one (arguably two) of the measures under this research question, this was the case. Efforts to refine the model and vary input methods for the variables made little difference on this measure or the others. The reason for the lack of variance may be the variables themselves. Contrary to expectations, some of the predictors used in these measures simply might not significantly impact the measures in question. This possibility is discussed in more detail in Chapter Five. However, given the small amount of variance explained by this model, coupled with the modest differences noted above on the two variables that were statistically significant, the following interpretation has limited implications.

That said, placement in the high NML cluster and majoring in a journalism-related field were found to be significant. Those students who placed in the high NML cluster scored significantly higher than those in the low NML cluster for motivation (average scores .229 points higher, $p < .001$ on a scale of 5) when holding all other variables constant. Accordingly, the directional hypothesis adopted for this measure from Maksl et al. (2015) – which predicted that respondents in the high NML cluster would be more motivated to consume news media than those in the low cluster – was not rejected. This implies that there is an association between Motivation for News Media Consumption and higher levels of news media literacy.

When controlling for the demographic variables, journalism majors (of the same age group, class standing, parental education, ethnicity and gender) scored an average of .586 points higher ($p < .001$) on the Motivation for News Consumption than non-majors on this measure. This implies that there is a positive association between Motivation for News Media Consumption and majoring in a journalism-related field.

A note of caution should be offered regarding the data in table 4.11. One of the questions on this measure may have inadvertently confused respondents. The second Likert statement in this instrument was "I follow the news because I'm supposed to." Though not identified as problematic prior to data collection, the wording of this statement is open to interpretation. The phrase "because I'm supposed to" could be interpreted as a statement of begrudging obligation or enthusiastic, voluntary commitment. From the standpoint of the analysis, removing this question from the measure made little difference in the amount of the variance the model accounted for (+2.1% when removed). Moreover, this measure only had four questions to begin with;

so, the resulting analysis with only three questions is of dubious value regardless of model fit. In any case, this question's potential to cause confusion needs to be addressed in the future efforts. This will be discussed further in Chapter Five.

News Media Skepticism

This instrument contained eight Likert scale items that measured the degree of skepticism respondents felt toward news media. The related hypothesis asserted that highly news literate undergraduates would be more skeptical of news media relative to their less news media literate peers when controlling for the demographic variables noted earlier.

Table 4.12.

News Media Skepticism

	B	SE	β	Sig.
Placement in High NML Cluster	-.016	.052	-.012	.757
Age (younger: up to 20)	-.056	.071	-.041	.436
Class Standing (Sophomore)	-.023	.074	-.014	.754
Class Standing (Junior)	.154	.076	.097	.043
Class Standing (Senior)	.056	.091	.038	.537
Parental Ed. Level (HS/GED)	.152	.152	.079	.317
Parental Ed. Level (Some college)	.159	.151	.086	.293
Parental Ed. Level (VoTech/Assoc.)	.193	.156	.088	.217
Parental Ed. Level (Bachelor's)	.253	.146	.176	.083
Parental Ed. Level (Master's)	.190	.153	.101	.213
Parental Ed. Level (Doctorate)	.240	.167	.092	.150
Ethnicity (Whites)	.122	.054	.085	.023
Gender (Cis Females)	-.153	.056	-.108	.006
Gender (Marginalized)	-.040	.122	-.012	.745
Journalism Majors	-.902	.100	-.334	< .001

($F[16,667] = 6.92$, $p < .001$; $r^2 = .145$, adj. $r^2 = .124$)
One value under Parental Ed. Level (Don't know/not sure) was not included

Again, statistical analyses indicated that this model was a good fit for the data. A modest 14.5% of the variance in News Media Skepticism was explained by the independent variables. The analysis regarding Placement in High NML Cluster and News Media

Skepticism yielded a negligible result that was not statistically significant; so, the directional hypothesis adopted from the Maksl et al. (2015) study – which predicted that respondents in the high NML cluster would be more skeptical of news media content than those in the low cluster – was rejected. This implies that there is not an association between skepticism towards news media and higher news media literacy levels.

Separately, four independent variables did yield significant results:

- Juniors had significantly higher levels of skepticism than their freshman counterparts when holding all other variables constant (i.e., same placement in NML cluster, age group, parental education, ethnicity, gender and major) (.154 points higher on the five-point scale used, $p = .043$).
- When holding all other variables constant, White respondents showed significantly higher scores of News Media Skepticism (.123) vs. non-White respondents ($p < .001$).
- Females were found to hold significantly less skepticism towards the news media (-.153, $p = .006$) than male respondents when holding all other variables constant.
- The three results noted above, while statistically significant, were extremely small. This was not the case for students in journalism-related majors, who were markedly less skeptical than non-majors. Their average score was almost a full point lower (-.912) than other undergraduates ($p < .001$) when holding all other variables constant. The standardized coefficient for the average journalism major's score ($\beta = -.334$) indicated a medium effect size; this was one of only two instances under this research question where an effect size was above the small range.

News Media Consumption

This instrument measured News Media Consumption on two levels: types of media outlets used by respondents and the amount of time spent consuming media content. The hypothesis related to this measure posited that highly news media literate undergraduates will consume more news relative to their less news media literate peers when controlling for the demographic variables. That hypothesis was measured in several ways. The first measure examined how many different types of news media sources (newspaper, TV news, radio news, Internet-only news outlets, podcasts) respondents used in a typical weekday. Each respondent received an index score of 0-5 based on how many of these news media sources they consumed on a typical weekday. Respondents were instructed to say "yes" to each of these sources if they consumed content from it regardless of how they accessed it. So, for example, if a person got news media content via a newspaper, they would say "yes" in response to the question about newspapers regardless of whether they got that content from a hard copy newspaper, the newspaper's website, the newspaper's Twitter feed, and so on. The dependent variable for the multiple regression was the continuous variable, Number of Media Types Consumed.

Table 4.13.

News Media Consumption by Number of Media Types Consumed

	B	SE	β	Sig.
Placement in High NML Cluster	.317	.097	.130	.001
Age (younger: up to 20)	.257	.134	.105	.056
Class Standing (Sophomore)	-.233	.139	-.077	.095
Class Standing (Junior)	-.087	.142	-.030	.543
Class Standing (Senior)	-.154	.171	-.059	.366
Parental Ed. Level (HS/GED)	.361	.285	.104	.205
Parental Ed. Level (Some college)	.437	.282	.131	.123
Parental Ed. Level (VoTech/Assoc.)	.248	.293	.063	.397
Parental Ed. Level (Bachelor's)	.413	.273	.159	.131
Parental Ed. Level (Master's)	.458	.286	.136	.109
Parental Ed. Level (Doctorate)	.307	.312	.065	.326
Ethnicity (Whites)	-.212	.101	-.082	.035
Gender (Cis Females)	-.155	.105	-.060	.138
Gender (Marginalized)	-.524	.228	-.092	.022
Journalism Majors	.586	.187	.121	.002

($F[16,669] = 3.26$, $p < .001$; $r^2 = .074$, adj. $r^2 = .051$)
One value under Parental Ed. Level (Don't know/not sure) was not included

Multiple regression testing indicated that this model was a good fit for the data, but only 7.4% of the variance in the dependent variable was explained by the independent variables. Accordingly, the implications of these results are limited. Those students who placed in the high NML cluster scored significantly higher than those in the low NML cluster (.317 on a scale of 5, p = .001) when controlling for all other variables. This result was statistically significant; therefore, the directional hypothesis adopted from the Maksl et al. 2015) study – which predicted that respondents in the high NML cluster would consume more news media than those in the low cluster – was not rejected. This implies that high news media literacy levels are associated with consumption of news media from a greater number of media types (newspaper, radio, etc.).

The results also indicated that the relationship between the number of news media platforms used on a typical weekday was statistically significant for three other independent variables. Within the context of the five-point index used:

- Journalism majors consumed media from more sources (.586) than non-journalism majors ($p = .002$) when holding all other variables constant.
- Members of the marginalized gender group consumed content from fewer media sources (-.522) than cis males ($p = .022$) when holding all other variables constant.
- Ethnicity was also found to be a significant variable with Whites reporting a lower number of media types used than non-Whites (-.212, $p = .035$) when holding all other variables constant.

The second measure under this hypothesis – total time spent across media sources – was calculated by asking each respondent how much time they spend consuming news content from a particular media type on a typical weekday. Upon examining the data, a potentially serious problem was identified. In reviewing the responses, it was noted that the mean time spent consuming news media by respondents overall was roughly six hours daily. The figure for journalism majors was even higher. Even assuming that all respondents were highly committed consumers of news media, those figures are probably unrealistic. Possible reasons for this skew and ways to address this problem in future research are discussed in the next chapter.

Perhaps not surprisingly given the aforementioned concerns about this data, one assumption of the multiple linear regression was not met for the total time spent across media sources measure. A normal distribution of the residuals was not observed. Given

that, plus the fact that the data for this measure is likely unreliable (as noted above), reporting of these results above is not warranted.

There was a final measure under this research question – time spent consuming news via social media. In this case, a normal distribution of the residuals was not observed. Moreover, the model was not a good fit for this data ($F[16,479] = 1.29$, $p = .195$). Given all of this, reporting of this data is not warranted.

Current Events Knowledge

The final hypothesis under this research question posited that highly news literate undergraduates would be more knowledgeable about current events relative to their less news media literate peers when controlling for demographic variables. This instrument asked respondents to answer seven questions about current events. An index score was generated based on the total number of correct answers each person provided.

Table 4.14.

Current Events Knowledge

	B	SE	β	Sig.
Placement in High NML Cluster	1.12	.109	.369	< .001
Age (younger: up to 20)	.036	.150	.012	.813
Class Standing (Sophomore)	.279	.157	.073	.075
Class Standing (Junior)	.579	.159	.163	< .001
Class Standing (Senior)	.671	.191	.203	< .001
Parental Ed. Level (HS/GED)	.158	.320	.036	.622
Parental Ed. Level (Some college)	.421	.318	.101	.185
Parental Ed. Level (VoTech/Assoc.)	.343	.330	.069	.299
Parental Ed. Level (Bachelor's)	.466	.307	.144	.130
Parental Ed. Level (Master's)	.474	.321	.112	.141
Parental Ed. Level (Doctorate)	.553	.351	.094	.116
Ethnicity (Whites)	.157	.113	.049	.165
Gender (Cis Females)	-.241	.118	-.075	.041
Gender (Marginalized)	-.615	.257	-.086	.017
Journalism Majors	.608	.210	.100	.004

($F[16,669] = 13.75$, $p < .001$; $r^2 = .252$, adj. $r^2 = .234$)
One value under Parental Ed. Level (Don't know/not sure) was not included

Statistical analysis indicated that this model was a good fit for the data, and more than a quarter (25.2%) of the variance in the current events scores was explained by the independent variables. Those students who placed in the high NML cluster scored significantly higher than those in the low NML cluster on this instrument (1.12 points, $p < .001$). Thus, the directional hypothesis adopted from the Maksl et al. (2015) study – which predicted that respondents in the high NML cluster would be score higher on the current events measure than those in the low cluster – was not rejected. Notably, this result was the second of two instances under this research question where an effect size above in the small range ($\beta = .369$). This implies that there is a positive association between higher news media literacy levels and a better command of current events.

Within the context of the seven-point index scale used in this instrument, five other associations were found to be significant:

- Class standing was associated with higher scores in two instances ($p < .001$). Both juniors (.579) and seniors (.671) had higher average scores than freshman.
- Gender was associated with higher scores in two instances as well. Both cis females (-.241, $p = .041$) and the marginalized group (-.615, $p = .017$) scored lower on average than their male counterparts.
- Journalism majors' average scores were .608 points higher in this instrument vs. non-journalism majors ($p = .004$).

Research Question Three

The third research question looked at the differences that existed between highly news media literate undergraduates and their less news media literate peers when viewed through the lens of their demographics. Chi-square testing was done for demographics

variables that were categorical, whereas Goodman and Kruskall's gamma coefficient was used for variables that were ordinal.

All assumptions underlying Chi-square testing were met in the analyses below. The data involved a random sample, and all values were sufficiently large (no cells less than 5). The latter assumption was met in part thanks to the grouping of the variables that was described under the previous research question. Likewise, all assumptions of the gamma coefficient were met. First, this test was used for ordinal variables. The other assumption – that there is a monotonic relationship between the variables – cannot be tested under this analysis ("Goodman and Kruskal's", n.d.), but a review of the data indicated that, for the most part, relationships between the variables were consistently direct or inverse.

Age

The sixth hypothesis predicted that there would be no relationship between age and placement in either NML group. Since these age values could be viewed as ordinal, the gamma coefficient was used to analyze the relationship. The result was statistically significant (γ = .131, p = .010), so the null hypothesis was rejected. Given the data noted in table 4.17, these results imply that those in the high news media literacy cluster are more likely to be in the 21 and older group.

Table 4.15.

Age and NML Cluster Placement

Age Group		High News Media Literacy Cluster (n=323)	Low News Media Literacy Cluster (n=350)
20 and younger	Observed n	162	203
	Observed Cluster %	(44.4%)	(55.6%)
	Expected n	175.2	189.8
21 and older	Observed n	161	147
	Observed Cluster %	(52.3%)	(47.7%)
	Expected n	147.8	160.2

$\gamma(1,673) = .131$, $p = .010$

Gender

The seventh hypothesis stated that there would be no relationship between gender and placement in either NML group. Values for this independent variable were broken down into three groups as described under the previous research question.

Table 4.16.

Gender and NML Cluster Placement

Gender		High News Media Literacy Cluster (n=330)	Low News Media Literacy Cluster (n=358)
Male (cis)	Observed n	125	74
	Observed Cluster %	(62.8%)	(37.2%)
	Expected n	95.5	103.5
Female (cis)	Observed n	184	273
	Observed Cluster %	(40.3%)	(59.7%)
	Expected n	219.2	237.8
Marginalized	Observed n	21	11
	Observed Cluster %	(65.6%)	(34.4%)
	Expected n	15.3	16.7

$X^2(2,688) = 32.44$, $p < .001$

The results were statistically significant ($p < .001$), and the null hypothesis was rejected. Cis male and marginalized respondents were more likely to place in the high NML cluster, though it should be noted that the results for marginalized respondents need to be treated carefully because of the small sample involved. By contrast, cis female respondents were more likely to place in the low NML cluster more frequently than expected. This implies that there is a relationship between gender and likelihood of placement in the high news media literacy cluster.

Ethnicity

Analysis was then conducted to explore relationships between ethnicity and placement in the NML clusters. A Chi-square test of association was run using the all the ethnicity values from the original survey.

Table 4.17.

Ethnicity and NML Cluster Placement

Ethnicity		High News Media Literacy Cluster (n=330)	Low News Media Literacy Cluster (n=359)
White	Observed n	235	223
	Observed Cluster %	(51.3%)	(48.7%)
	Expected n	219.4	238.6
Non-White	Observed n	95	136
	Observed Cluster %	(41.1%)	(58.9%)
	Expected n	110.6	120.4

$X^2(1,689) = 6.38$, $p = .012$

In this dichotomous analysis, White respondents were more likely to place in the higher NML cluster, and non-White respondents were more likely to place in the lower cluster. The results were statistically significant ($p = .012$). Thus, the null hypothesis was

rejected. This implies that there is a relationship between ethnicity and likelihood of placement in the high news media literacy cluster.

Parental Education Level

The ninth hypothesis posited that there would be no relationship between the educational level of respondent's parents and placement in either news media literacy group. Because the values for this variable could be treated as ordinal, testing was done via the gamma coefficient.

Table 4.18.

Parental Education Level and NML Cluster Placement

Highest Level Completed		High News Media Literacy Cluster (n=330)	Low News Media Literacy Cluster (n=359)
Less Than High School	Observed n	5	20
	Observed Cluster %	(20.0%)	(80.0%)
	Expected n	12.0	13.0
High School/GED	Observed n	38	59
	Observed Cluster %	(39.2%)	(60.8%)
	Expected n	46.5	50.5
Some College But No Degree	Observed n	45	64
	Observed Cluster %	(41.3%)	(58.7%)
	Expected n	52.2	56.8
Vocational/Technical /Associate/Community College Degree	Observed n	31	44
	Observed Cluster %	(41.3%)	(58.7%)
	Expected n	35.9	39.1
Bachelor's Degree	Observed n	124	101
	Observed Cluster %	(55.1%)	(44.9%)
	Expected n	107.8	117.2
Master's Degree	Observed n	59	47
	Observed Cluster %	(55.7%)	(44.3%)
	Expected n	50.8	55.2
Doctorate	Observed n	26	22
	Observed Cluster %	(54.2%)	(45.8%)

	Expected n	23.0	25.0

$\gamma(7,689) = 2.16$, $p < .001$

As table 4.20 indicates, the rate of inclusion in the high NML cluster increased in association with higher degrees of parental education. The results were significant ($p < .001$). Accordingly, the null hypothesis was rejected. This implies that respondents whose parents had a bachelor's degree or higher had a better chance of placing in the high NML group. A review of the adjusted standardized residuals for each value in this analysis indicated the largest residual amongst values in the high NML cluster was the bachelor's degree (2.6). The largest residual among the low NML cluster was less than high school (- 2.8). The adjusted standardized residual is a gauge of the strength of the difference between the values in the observed and expected cell counts ("Standardized residuals", n.d.), and values with an absolute value greater than 2 indicate that the observed value for that cell is significantly lower or higher than expected ("Interpreting adjusted residuals," n.d.). Accordingly, the cells that were most significant to this Chi-square value were the two noted above.

Class Standing

The penultimate hypothesis under this research question posited that there would be no relationship between class standing and placement in either news media literacy group. Like parental education levels, this variable lent itself to testing via the gamma coefficient.

Table 4.19.

Class Standing and NML Cluster Placement

Class Standing (Based on Completed Hours)		High News Media Literacy Cluster (n=330)	Low News Media Literacy Cluster (n=359)
Freshman (0-30)	Observed n	67	104
	Observed Cluster %	(39.2%)	(60.8%)
	Expected n	81.9	89.1
Sophomore (31-60)	Observed n	63	74
	Observed Cluster %	(46.0%)	(54.0%)
	Expected n	65.6	71.4
Junior (61-90)	Observed n	87	80
	Observed Cluster %	(52.1%)	(47.9%)
	Expected n	80.0	87.0
Senior (91 or More)	Observed n	113	101
	Observed Cluster %	(52.8%)	(47.2%)
	Expected n	102.5	111.5

$\gamma(3,689) = .157$, $p = .005$

The results above were significant ($p = .034$; $p = .005$). Accordingly, the null hypothesis was rejected. These results suggest a relationship exists between increased placement in the higher NML cluster and higher class standing. Whereas underclassmen (freshman and sophomores) failed to place a majority of their ranks in the higher cluster, results for juniors and seniors showed the opposite. The adjusted standardized residual for the freshmen value was - 2.6, and this was the only adjusted standardized residual with an absolute value greater than 2. Accordingly, it was the greatest driver of the Chi-square value on this measure.

Internet Access

The final hypothesis under this research question looked at the relationship between Internet access reported by students and placement in either news media literacy

group. Respondents were asked to indicate their agreement with the following statement: "I have reliable access to the Internet most of the time." Answers were collected via a five-point Likert scale. As such, responses were treated as ordinal – ranging from strongly disagreeing that they had Internet access (low access) to strongly agreeing (high access). Unlike the assumptions of a Chi-square, the symptoms of a gamma coefficient do not include minimum values; hence, some of the low values in table 4.22.

Table 4.20.

Internet Access and NML Cluster Placement

"I Have Reliable Access to the Internet Most of the Time"		High News Media Literacy Cluster (n=330)	Low News Media Literacy Cluster (n=359)
Strongly Agree	Observed n	237	215
	Observed Cluster %	(52.4%)	(47.6%)
	Expected n	216.5	235.5
Agree	Observed n	82	115
	Observed Cluster %	(41.6%)	(58.4%)
	Expected n	94.4	102.6
Neither Agree nor Disagree	Observed n	4	15
	Observed Cluster %	(21.1%)	(78.9%)
	Expected n	9.1	9.9
Disagree	Observed n	4	13
	Observed Cluster %	(23.5%)	(76.5%)
	Expected n	8.1	8.9
Strongly Disagree	Observed n	3	1
	Observed Cluster %	(75.0%)	(25.0%)
	Expected n	1.9	2.1

$\gamma(4,689) = -.262$, $p < .001$

The results of the analysis were significant ($p < .001$), so the null hypothesis was rejected. Perhaps not surprisingly, a very strong majority of students (94.19%, n=689) strongly agreed or agreed to this Likert statement. However, table 4.22 notes a contrast between

those who strongly agreed and those who agreed. Whereas a modest majority of those who *strongly* agreed with the statement placed in the high NML cluster, a stronger majority of those who only agreed with the statement placed in the low cluster – nearly 6 out of 10. This result suggest the possibility that the gamma coefficient assumption regarding monotonic variables was not met. Given that, plus the predominant skew in the agreement values for this measure, it is inadvisable to draw conclusions from this analysis.

Research Question Four

The final research question examined the relationship between news media literacy levels for undergraduates who major in a journalism-related field vs. those who do not. The lone hypothesis under this question asserted that undergraduates majoring in journalism-related fields would not get higher NML scores than other students. To examine this, the dichotomous major variable described under research question 2 was used in this analysis.

Table 4.21.

Clustering of Journalism Students vs. Non-Journalism Students

Major		High NML Cluster	Low NML Cluster
JOU students (n=46)	Observed n	33	13
	Observed Cluster %	(71.7%)	(28.3%)
	Expected n	22	24
Non-JOU students (n=643)	Observed n	308	335
	Observed Cluster %	(46.2%)	(53.8%)
	Expected n	330	359

$X^2(1,689) = 11.22$, $p = .001$

The difference between these groups was statistically significant ($p = .001$). Accordingly, the null hypothesis was rejected. As noted in table 4.23, students majoring in journalism-

related fields were much more likely to be in the higher NML group than were students from other disciplines. Whereas a majority of students in journalism-related majors placed in the high NML cluster, a modest majority of non-journalism students placed in the low NML cluster. This implies that a relationship does, in fact, exist between majoring in a journalism-related field and the likelihood of placement in the higher news media literacy cluster.

Summary

This chapter described the quantitative data analyses that were performed for the four research questions in this study and the hypotheses related to each. It was preceded by a description of the sample used in the study and a review of the reliability analysis that was done on relevant portions of the survey. The following chapter will discuss what implications and conclusions can be drawn from these results. The potential for future research will also be discussed along with the implications of this study vis a vis theory, research and practice.

CHAPTER V

CONCLUSIONS

The preceding chapters of this dissertation provided detailed information on this study that included an in-depth literature review, a description of the study's methodology, a review of the statistical analyses that were applied to the data collected, and the results of those analyses. This last chapter begins with a brief overview of the study that includes a summary of the problem statement, purpose statement, methodology, research questions and study design. There is also a summary of the data analysis for all four research questions. This chapter will also discuss the conclusions that can be drawn from the data; recommendations that can be made based on the same; and the implications of this study for theory, research and practice.

Statement of the Problem

Like most young people, university students are adept in their use of communication technologies such as smartphones. However, this does not necessarily mean their NML levels are also high. As one academic lamented, the current generation of college students seem to be "technology-savvy yet information-illiterate" (Padgett, 2017, p.6). If true, a better understanding of news media literacy among undergraduate students and the factors that impact that literacy is warranted. Curriculum based on such

insights could enable students to better navigate the media landscape they will increasingly rely on in the years to come.

Moreover, given the numerous challenges faced by journalists and news media outlets, the need for increased news media literacy skills is a matter of economic survival for them (Maksl et al., 2015). However, there is a lack of scholarship that examines the NML levels among college students majoring in disciplines that are typical avenues to careers in professional journalism.

Statement of the Purpose

The purpose of this study was to explore the news media literacy levels of undergraduate journalism majors and other students at two central U.S. universities using a quantitative survey. A key focus of this study an examination of the NML levels of students in journalism and journalism-related programs to determine if differences in their news media literacy levels vs. those of students in other majors can be identified.

Review of Methodology

A quantitative survey testing respondents in multiple areas related to news media literacy, knowledge, attitudes and preferences was adapted from Maksl et al. (2015). The survey contained instruments that were based on research in fields such as psychology, health education and media studies. A copy of the survey is in Appendix B.

A random sample of undergraduate students at two central U.S. universities were solicited for participation in the survey in September 2020. A total of 1,104 people responded to the survey; when filtered to exclude people outside the target audience and those who did not finish the entire survey, a total of 706 respondents remained.

Once data were collected via the Qualtrics platform, it was downloaded to the IBM Statistical Package for the Social Sciences (SPSS) version 26 for analysis. The analysis generated descriptive statistics as well as inferential statistics that were used to examine how the different variables interacted with each another. Testing on the data was done via cluster analysis, independent t-test, multiple regression, Chi-square and gamma coefficients.

Summary of Findings

The following is a summary of the findings to each of the four research questions. A detailed analysis of those results was provided in the preceding chapter. Conclusions are drawn for each research question below based on those results.

Research Question One

The first research question examined if respondents in the high NML cluster would score higher on the Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of News Media Structures instruments. The lone hypothesis under this research question asserted that average mean scores on each instrument would not differ significantly between the two NML clusters. However, this hypothesis was rejected. Independent t-tests on the mean differences for each instrument between the two clusters were statistically significant ($p < .001$).

In addition, the scores for Need for Cognition and Media Locus of Control in this study were largely consistent with the original Maksl et al. (2015) study, as values did not vary by more than 0.30 points on a five-point scale across the two studies. The scores for Knowledge of News Media Structures were somewhat higher in this study than in the original, but that difference could be attributed to the respective samples used. The

original study focused on high school students. This effort involved college students who were several years older.

Regardless of these minor differences, the results for Research Question One in this study are strikingly similar to the corresponding research question and hypothesis in the original study. The fact that the results are so similar despite the differences in the study participants and the environment in which the survey was conducted speaks favorably to the assertion that the independent variables – Need for Cognition, Media Locus of Control, and Knowledge of News Media Structures – have a significant, direct association with news media literacy levels. This is not surprising when considering the meaning of each measure. Among people who…

- have a strong need to make sense of the world (NFC);
- a high degree of confidence about their ability to navigate the media (MLOC);
- and a firm grasp of media operations, organizations and effects;

…it logically follows that such people would display high news media literacy levels.

A further note is warranted regarding the point above on the differences in environment for the two studies. Although they were only five years apart, and both targeted Gen Z, it is still hard to overstate the changes that the sample and the environment underwent in those five years. First, the developmental and life changes that occur to a person between high school and college are significant. But beyond that, the world of 2020 looked very different than it did in 2015. When the original study was conducted in 2015, President Obama was in office and life in America, while not without its challenges, was relatively stable. The environment in which *this* study was conducted was the fourth year of a volatile Trump presidency. The survey was administered during

a vitriolic election campaign, a global pandemic, a whipsawing economic cycle, and widespread civil unrest in the wake of the George Floyd killing in May 2020. Additionally, polling data indicated that already-negative attitudes towards the news media that existed in 2015 worsened in the five years that followed, a fact that could have swayed responses on the Media Locus of Control measure. And yet, the results for Research Question One and the related hypothesis were strikingly consistent across the two studies.

Research Question Two

The second research question examined the relationship between news media literacy and four different attitudes and competencies related to students' media use – Motivation for News Media Consumption, News Media Skepticism, News Media Consumption, and Current Events Knowledge. A directional hypothesis asserted that scores for each of these four dependent variable would be higher for those individuals in the higher NML cluster. Multiple regression was done to evaluate the association between higher NML levels and these variables while controlling for the following demographics: Age, class standing, parental education level, gender and ethnicity.

Motivation for News Media Consumption

In this analysis, placement in the high NML cluster and majoring in a journalism-related discipline were the only variables found to be significant predictors for motivation. On several levels, this is not surprising. Both variables intuitively fit the likely profile of someone who is highly motivated to consume news media. Being highly motivated is often a prerequisite for having a high degree of literacy (or competency) in any field of endeavor. And students who chose to major in a journalism-related discipline

could naturally be expected to be well motivated to consume the products they one day hope to produce professionally. A second reason these results are not surprising is that they are consistent with the original Maksl et al. (2015) study, which also found that placement in the higher news media literacy group was associated with higher motivations scores. The difference in scores across the two studies, which are based on a five-point scale, is small – 0.370 in the original study vs. 0.229 in this study.

Two points should be noted here. As explained in the preceding chapter, there was a potentially confusing question in this instrument that may have impacted results. Recommendations on how to address this problem are noted later in this chapter. Second, although analysis indicated that the regression model was a good fit for this data, it also indicated that the amount of variance explained by the independent variables (9.5%) was low for this instrument. The amount of variance explained was also low for two other measures under this research question: News Media Skepticism (14.5%) and News Media Consumption (4.3-7.4% on the three tests under that instrument). Efforts to refine the model and vary input methods for the variables made little difference in this regard. Accordingly, recommendations are offered later in this chapter is how to address this in future replications of this study.

The environment that the study was conducted may have impacted the variance figures noted above. All of these variables, particularly skepticism, could have been impacted by the presidential campaign that was taking place when the survey was conducted. During that campaign, virulent and continual criticism of the news media featured prominently. Arguably, this assumption is borne out by the fact that the one instrument under this research question that fared better at accounting for variance –

Current Events Knowledge, where the independent variables accounted for 24.5% of the variance – would be least likely affected by the environmental dynamic. However, it is also possible that the variables themselves are the problem. Some of the variables tested simply may not greatly impact this phenomenon. Recommendations on how this can be addressed are included later in the chapter.

News Media Skepticism

The results of the tests for skepticism are interesting on several levels. First, the result of this study differed with the findings of Maksl et al. (2015). In the earlier study, respondents in the high NML cluster had slightly higher new skepticism scores under this measure (0.17 on a five-point scale) than those in the low cluster, and those results were significant ($p < .01$). The opposite was true in this study. Placement in the high NML cluster resulted in slightly lower skepticism scores (-.016), although these results were not significant ($p = .757$).

That said, a notable association was found between high NML levels and skepticism among journalism majors. Respondents majoring in journalism-related disciplines not only scored lower on skepticism (-.902, $p < .001$), but they scored nearly a full point lower on the five-point scale then non-majors. In one sense, this is not surprising. After all, it is counterintuitive that students who are majoring in a discipline that they presumably plan to work in would hold a highly skeptical attitude towards that field or the product it produces. Interestingly, the original Maksl et al. (2015) study examined what relationship, if any, existed between high NML levels and previous exposure to youth media literacy programs. They found no association. Although participation in a youth media literacy program and majoring in a journalism-related field

is not the same thing, the information that participants are exposed to in both endeavors are somewhat similar, presumably. In the earlier study, Maksl et al hypothesized that skepticism scores would be higher for respondents previously exposed to youth media literacy training programs. Accordingly, the findings in this study about skepticism scores for journalism majors in the high NML cluster placement is arguably inconsistent with Maksl et al.

Three other independent variables under this measure were found to be significant predictors of skepticism – being White, being a junior and being female. However, although statistically significant, the differences in skepticism scores on all three of these measures (ranging from –.153 to .154) are so small as to not warrant strong conclusions.

News Media Consumption

Consumption of news media was tested in several ways under this hypothesis, which asserted that people in the high NML cluster would consume more news media then those in the low cluster. For reference, the original study by Maksl et al. (2015) found no significant differences in news media consumption based on NML cluster placement.

News media consumption by number of media types consumed

In this instrument, participants were asked whether or not they got news media content on a typical weekday from a list of five different media types. Those five types were newspapers, TV news, radio news, Internet-only news outlets and podcasts. Based on their responses, each respondent received an index score of 0-5. The mean score for all respondents was on the lower end of the scale (M=1.94, SD=1.22). Placement in the high NML cluster held a significant positive association with the number of media types

consumed, with people in higher cluster scoring .317 points higher on this measure (p = .001). This result is intuitive – people with greater degrees of news media literacy can be expected to consume more media from a greater number of media types than other people. Journalism majors also had higher mean scores (.586, p = .002) than majors in other fields. Again, it is not surprising that people majoring in a given field would consume more types of content related to that field.

Two other groups had significant scores on this measure. Respondents in the marginalized gender group were found to consume media from fewer types (-.524, p = .022) than did males in the gender category. However, conclusions should be drawn carefully here given the very small sample size involved (n=32).

One other group, White respondents, scored slightly lower than nonwhites (-.212, p = .035). Though a small difference, this result could be tied to the timing of the survey. In the four months preceding the survey, there was intense media coverage regarding race relations in America. This was sparked by the death of George Floyd in May of that year, which was followed by massive protests, civil unrest, and riots in many American cities. Much of the related news media coverage explored topics such as racism, White supremacy, and other dynamics that could be drivers of cognitive dissonance for white Americans. In addition to this news media content, entertainment media outlets also began to address issues of race relations far more pervasively. This sea change in the quantity and tone of media content related to race in America might have impacted survey respondents. As noted in Chapter Two, Gen Z is a group that sees itself as compassionate and open-minded, among other attributes. Seeing ongoing media coverage that highlighted problematic racial attitudes and behaviors involving white Americans

could have disincentivized and diminished media consumption by Gen Z members during the period when the survey was administered. Although such a reaction may seem contrary to some of the other descriptors that Gen Z applies to itself, the concept of compassion fatigue may be instructive in interpreting these results. Compassion fatigue is a phenomenon whereby people "may have become so overwhelmed by the ever-increasing humanitarian emergencies in the world and their concomitant needs that they either cut back their giving or cut out giving entirely" (Totten et al., p. 81). While this definition speaks of the phenomenon in terms of philanthropy and financial support, it can easily be applied to the mental and emotional energy that is required when paying attention to a prolonged, painful social crisis like the protests, riots, racial tensions and reform efforts that were omnipresent in the media just prior to this survey.

Regarding the other measures under this research question: As noted in Chapter Four, there were multiple problems with the data for both the news media consumption by total time spent across media sources measure and the news media consumption via social media measure. Most notably, both measures failed to meet the assumption of normality of residuals. Accordingly, discussion of these results is not advisable.

Current Events Knowledge

The final measure under this research question looked for associations between higher news media literacy scores and current events acumen. The original study by Maksl et al (2015) found a statistically significant association between placement in the high cluster and higher scores on the current events instrument. Students in the high NML cluster of that study answered more questions correctly than their counterparts in the low cluster (0.88 higher on a seven-point scale, $p < .001$). This study found similar

results, with students in the high NML cluster scoring significantly higher (1.12 points, $p < .001$) than students in the low cluster. As is the case with several other results under this research question, this finding is not surprising. People who possess higher news media literacy and who consume more news content (per the previous measure) can be expected to have a better grasp of current events.

Journalism majors' average scores were .608 points higher in this instrument vs. non-journalism majors ($p = .004$). For reasons noted earlier, this is not surprising. Students who consume more news media and study the news media profession can be expected to have a better grasp than other students regarding what is going on in the news.

Four other variables across two different categories were found to be significant under this measure. Class standing was associated with higher scores in two instances ($p < .001$). Both juniors (.579) and seniors (.671) had higher average scores than freshmen. This can be attributed to the life stage that different students are at based on their matriculation. College freshman often have their attention firmly fixed on orienting themselves to college. They find themselves in a new environment with new people, often in a new locale. That is a great deal for a young person in their late teens to deal with. Accordingly, they may be less inclined to pay attention to what's going on in the broader world. Contrast that with the perspectives and life stage of upperclassmen, particularly seniors, who often are focused on graduation and life in a post-graduate world. People in that situation can be expected to pay more attention to what is going on in the larger world that they are about to enter.

Finally, gender was associated with higher scores in two instances as well. Both cis females (-.241, p = .041) and the marginalized group (-.615, p = .017) scored lower on average than their male counterparts. This might be explained by the research data noted on the previous measure, whereby men tend to be more interested in a political news than other genders. Several of the questions on this instrument involved political news.

Research Question Three

Research question three examined differences between highly news media literate undergraduates and their less news media literate peers based on six demographic categories: Age, gender, ethnicity, parental education level, class standing, and Internet access. The six hypotheses under this research question each posited that there would be no relationship between one of the demographic variables and placement in either news media literacy group. In all six cases, the hypothesis was rejected as a significant association was found between each demographic variable and placement in the NML clusters. Clearly, the results of this measure indicate that there is a relationship between a student's demographic attributes and their news media literacy proclivities.

These results differ slightly from those in the original Maksl et al (2015) study. In that survey, age, race and parental education levels were found to hold a significant association with placement in the NML clusters. However, that study did not find any association between gender and cluster placement as was the case in this study. Internet access and class standing were not among the variables tested in the original study.

An instructive way to look at the results under this research question is to group all the variables that were ordinal – age, parental education and class standing. In all

these cases, higher news media literacy levels were associated with increases in the independent variable. This means that, based on these results, a student would have the best chance of placing in the high NML cluster if he or she were:

- **Older** – Respondents in the "21 and older" group were 7.9% more likely to place in the high NML cluster ($p = .010$).
- **Further along in college** – Slim majorities (roughly 52%) of juniors and seniors placed in the high NML cluster, whereas sophomores (46.0%) and freshman (39.2%) fared more poorly ($p = .005$). The adjusted standardized residuals for this measure indicated that the difference between underclassmen and upperclassmen was driven by the freshman value in the low NML cluster, which supports the idea that advanced matriculation is a driver of placement in the high news media literacy cluster.
- **From a family where at least one parent had a bachelor's degree or higher** - Across the seven values under this variable, the likelihood of placement in the high ML cluster climbed steadily ($p < .001$). The tipping point towards majority placement occurred at the bachelor's degree level. The adjusted standardized residuals for this measure indicated that the difference between educational values was most greatly impacted by two cells – less than high school in the low NML cluster and bachelor's degree in the high NML cluster. Given the socioeconomic implications of that gap, this supports the idea that respondents who placed in the high NML cluster may have come from homes with greater household incomes.

This mini-profile of a high NML cluster member is consistent with earlier findings regarding class standing and NML cluster placement, but this is the first time that age was found to be a significant predictor of NML placement.

In the gender category ($p < .001$), cis males (62.8%) and members of the marginalized group (65.6%) were much more likely to be placed in the high NML cluster then cis females (40.3%). The result involving the marginalized gender group is interesting in light of the previous research question. Results there indicated that this group consumes fewer media types then do cis males. The conflict in these results – higher NML placement despite less news media consumption – coupled with the small sample size (n=32) makes it difficult to draw conclusions about any broader meanings. This suggests that further research on NML levels among members of marginalized gender groups would be in order, assuming a large enough sample could be drawn.

White respondents were 10.2% more likely to be placed in the high NML cluster than their non-White counterparts ($p = .012$). This result is challenging to interpret, in part, because of the results under Research Question Two. The measures there indicated that Whites were slightly more skeptical of news media than non-whites (.122 on the five-point scale, $p = .023$), and they consumed less media than non-Whites both in terms of type (-.212 on a scale of five, $p = 0.35$) and in time spent (27.45 minutes less on a typical weekday, $p = .007$). Without additional data, it is impossible to interpret these results reliably. However, one possibility is that White respondents are in the higher NML cluster despite their skepticism and lower consumption because they consume higher-quality news media. In other words, they may spend less time consuming news media content but get that content from more reliable sources.

The results regarding reliable Internet access and placement in either cluster were found to be statistically significant ($p < .001$). However, the skew in responses from people with good Internet access was so pronounced (94.19%) that it makes it difficult to

draw conclusions. With only seven out of 689 respondents saying they did not have reliable Internet access, it makes the smaller group an outlier for all practical purposes. That said, like a number of other questions and instruments on this survey that were found to have flaws, the results of this question were instructive for future reference.

Research Question Four

This research question looked at associations between placement in the higher NML cluster and majoring in a journalism-related field. The lone hypothesis under this research question asserted that such majors would not achieve higher NML scores on average than other students. However, that hypothesis was rejected. Not surprisingly, given the results under the earlier research questions, students majoring in journalism-related disciplines (n= 46) placed in the high NML cluster at a higher rate than other students ($p = .001$). In fact, the difference was stark. There was roughly a 25% difference in placement based on majors, with 71.7% of journalism majors placing in the high cluster vs. 46.2% of non-journalism majors who placed there.

In assessing the possible causes and implications of this result, it should first be noted that this is the first time that a study looked specifically at NML cluster placement and majoring in a journalism-related field. So, further testing is required before strong conclusions can be drawn. That said, the fact that journalism students did better on this measure than other students is not surprising given the field they study. However, given the size of the difference, it would be worth exploring this dynamic in more detail if a larger sample of journalism students could be secured. For example, differences within the major could be explored to see what demographic or other factors might sway placement in the high NML cluster among journalism majors.

Summary

The preceding section reviewed the results of each research question and offered conclusions based on those results. The following section will examine the potential implications of these findings for research, theory and practice.

Implications

The results of this study hold significance for news media literacy education programs as well as for NML scholarship, given that they provide fresh insights that can be used by researchers, theorists and educators in the increasingly critical area of news media literacy. This is due, in part, to the fact that they addressed a gap in the existing research by specifically examining NML levels among students majoring in journalism-related disciplines. Although much scholarship exists about media literacy, far less is available on the important subset of news media literacy. Moreover, very little research exists on news media literacy levels among college students, and there is virtually no scholarship regarding the NML levels of students in journalism-related disciplines and how they compare to students in non-journalism majors. The results of this study address that gap.

Implications for Research

This study identified several opportunities to improve the survey instruments used to study NML, all of which can be implemented in replication efforts per the recommendations later in this section and near the end of this chapter. One of the ultimate goals of this study and others like it is the development of a standardized, reliable measure that can effectively measure NML levels. Until such a measure can be developed that is embraced by a majority of educators who engage in NML programs, the ability to

create effective interventions in this area will be hampered. After all, how can NML educators across the nation adopt best practices when they cannot define best practices because they lack a reliable, standardized way to measure program effectiveness? That said, establishing a measure like that will be difficult without reliable theory(s) to base it on, and such theories can only be established with additional research. The following is offered with future research in mind.

Reconsidering the NML measures

As noted under the "Implications for Practice" subsection that follows this one, some of the results of this study may bode well vis a vis the way journalism students responded. Or do they? The presumption that these results say anything positive or negative about student journalists and their news media literacy levels is predicated on the notion that the instruments used to measure news media literacy are the correct ones to use. However, that presumption is not a given since so little scholarship exists to support it.

Consider the way that news media literacy clusters were established. Based on earlier work by Maksl et al (2015), three measures were used collectively to assess the news media literacy of respondents. They were Need for Cognition (NFC), Media Locus of Control (MLOC), and Knowledge of News Media Structures. There are several potential problems here. First, as noted elsewhere, there was a potential clarity issue with one of the questions under MLOC. That problem can be solved rather easily in future efforts. However, two of the three aforementioned measures – NFC and MLOC – involve self-reported data in areas where respondents' egos could skew their answers. This means two of the three measures used as the basis for NML cluster placement are

less than objective. Moreover, one of them (MLOC) fared poorly on the reliability analysis. This is not to suggest that these measures should be eliminated as part of the NML assessment. NFC performed well on the reliability analysis, and the problem with MLOC reliability can be addressed. Moreover, both measures look at dynamics that should be a part of determining news media literacy. However, the over-emphasis on self-reported measures in assessing NML needs to be corrected. This can be done by adding more objective measures to the NML clustering variables like the Knowledge of News Media Structures measure that was used.

An excellent candidate for such inclusion is the Current Events Knowledge instrument that was used in the study but not factored into NML clustering. After all, how can an undergraduate or anyone else be said to be news media literate if they know little about current events? That is akin to saying that a student is an outstanding swimmer even though he or she never gets wet. If a person truly possesses a high degree of news media literacy, that strongly suggests that they not only consume news media, but that they also know how to use it well enough to stay abreast of the news of the day. Accordingly, replications of this study should add the Current Events Knowledge measure to the variables used to generate the NML clusters.

MLOC and the Dunning-Kruger effect

The concerns noted above about the self-reported measures used to determine NML cluster placement suggest an interesting possibility for future research. Per the Dunning-Kruger effect, people tend to overestimate their abilities if they also know less about what is required in that regard (Kruger & Dunning, 1999). In the context of the Media Locus of Control instrument, it would be interesting and possibly illuminating to

conduct repeated testing of undergraduate students using this instrument before and after they have the opportunity to go through a media studies or news media literacy course. [Obviously, the MLOC instrument would first need to be amended to address the problematically worded question noted earlier.] The results of such repeated testing could help determine if the concerns about this instrument – regarding whether or not respondents' egos might sway responses – are warranted or not.

Implications for Theory

One of the reasons why repeated comparisons were made between the results of this study and those in the original Maksl et al. (2015) study is the need to establish theory. Obviously, two studies with fairly different samples conducted in dramatically different environments are not nearly enough to develop new theories. But it is a start. And it is particularly noteworthy that several results of this study were consistent with Maksl et al. (2015). For example, both studies:

- Found similar mean differences between the high and low NML clusters on Need for Cognition and Media Locus of Control.
- Found a significant association between placement in the high NML cluster and each of the following variables: Age, ethnicity, and parental education levels.
- Found a significant relationship between placement in the high NML cluster and Motivation for News Consumption, News Media Skepticism, and Current Events Knowledge, respectively.

Replication and additional research is needed, of course. But the parallels between certain results in the two studies suggest that current research efforts are, to some extent, headed in the right direction. With time, additional evidence can be gathered, and it will become

possible to start establishing reliable theories about news media literacy – how to define it, how to measure it, what factors influence it, what impact NML has on other phenomena, and so forth.

As noted near the beginning of this dissertation, theory can only be established after relevant hypotheses are tested, tested and tested again until they are thoroughly validated and accepted by scholars in relevant fields as a valid explanation of a phenomenon. This study is one small step in that direction in the field of new media literacy. The suggestions in this section and in the "Recommendations" section at the end of this chapter will make it possible to further test these measures with different samples in different environments. This, in turn, will make it possible to continue moving toward the establishment of theories that can serve as the basis for a reliable measure of NML levels while also guiding related curriculums efforts.

NML and agenda setting theory

Although outside the scope of this study, it would be interesting to examine ties between news media literacy and agenda setting theory. Originally established in the 1970s, agenda setting theory asserts that although the media cannot tell people what to think (i.e., their opinion), it can definitely tell people what to think about (i.e., setting the agenda for public discourse). In their more recent scholarship, the authors of the original theory – McCombs and Shaw – examined agenda setting via certain dynamics that have parallels to the measures used in this study (McCombs et al., 2014). For example, whereas this study looked at Need for Cognition as one of the variables that impact news media literacy levels, McCombs et al. looked at the concept of "need for orientation" (p. 782) as being key to understanding the strength of agenda setting effects. This concept of

need for orientation, as well as several others they noted, are similar to the measures used as part of this dissertation. This suggests that efforts to establish theory in the area of news media literacy are potentially well served by incorporating elements of the agenda setting work done by McCombs, Shaw and others. Further research is required to examine this possibility further.

Implications for Practice

The results of the study hold insights for educators who are preparing journalism students to enter the news media profession as well as those in other disciplines, both in and outside higher education.

The state of journalism and journalism education

In some regards, the results of this study bode well regarding students majoring in journalism-related disciplines. Such students showed significantly greater placement rates in the high news media literacy cluster than other students – approximately 25% higher. Moreover, students in journalism-related majors performed far better than their counterparts on the Current Events Knowledge measure. Although that is not particularly surprising, it does speak well of how such students keep themselves informed regarding national and world affairs.

However, one significant result is troubling. Journalism students at the institutions where the study was conducted distinguished themselves sharply vs. their peers on the News Media Skepticism measure. On a five-point scale, students who major in journalism scored almost a full point lower (-.902) than their peers. As discussed in Chapter Four, this result is not surprising in one sense. After all, it follows that a student who plans to devote his or her professional life to journalism would hold that profession

and its products in high esteem. But the size of this result needs to be viewed in the context of the current state of journalism.

As noted in Chapter Two, public faith in journalism and the news media industry is poor. Multiple polls over the last decade show that a majority of the American public no longer see news media information as trustworthy or reliable. No doubt, a significant portion of this sentiment is driven by the increasingly harsh partisanship and polarization that exists in America. However, it would be imprudent to assume that at least part of the problem is not the product itself.

The financial pressures that bear down on the news media industry drive many journalism operations, even prestigious ones, to focus on delivering content that can best be monetized. In an industry where advertising dollars are less and less available to news media platforms, this means subscription fees are more important than ever. At first glance, that may seem like a positive development. After all, many journalists reasonably argue that more people should be willing to pay for quality journalism. So, it follows that an environment where more focus is placed on persuading people to subscribe is a good one. Unfortunately, this idea conflicts with another dynamic. There is less and less profit to be found today in delivering consistently reliable but sometimes unwelcome news, given that news consumers increasingly demand that their partisan perspectives be echoed in the media they follow. Even a publication as venerable as *The New York Times* is not above accusations that it increasingly caters to a hard left subscriber base to bolster subscriptions (Miller, 2020). As a result, the critics say, this makes the *Times* and other such outlets less reliable sources of information because their coverage is now designed to curry favor with highly opinionated subscriber bases.

Whether or not such criticisms are accurate or fair is beside the point. The increasing number of such criticisms, coupled with consistently low trust ratings for the news media via reputable polling organizations like the Pew Research Center and Gallup, clearly indicate that there is an acute crisis of faith in the journalism profession. Given that, how can journalism students have so much less skepticism toward journalists and journalism content than their peers? That question begs for an examination of how journalism professors address prevailing criticisms of the news media industry in their curriculum.

Understandably, academics who teach journalism – like the students themselves – are not likely to do so because they lack enthusiasm and regard for the profession. But given all the factors mentioned above, it seems that a disconnect may exist between the way professors are preparing students for the career field and the way that the profession and its products are seen by the public. Naturally, journalism professors might counter this suggestion by asserting that courses exist that address popular media criticisms. Assuming that is true at the subject institutions, why are journalism students so much less skeptical of the industry than their peers? Are journalism students being exposed to prevailing criticisms of the craft in a manner that takes such critiques seriously, or are these criticisms being dismissed and/or discounted by academics? Noteworthy is the fact that many criticisms of the news media in recent decades originated on the political right. As noted in Chapter Two, many right-wing commentators and media outlets found great success in routinely (and sometimes unfairly) criticizing news media practices. Could it be that practitioners and educators now view criticisms of their profession as inherently partisan in nature, and thus dismiss them reflexively? If so, it is worth noting that an

increasing number of pundits and journalists with pronounced left-of-center sensibilities can be counted among the critics of today's news media industry.

There is nothing inconsistent with having high regard for a profession in principle and still examining the work it does with a keenly critical eye. But the results on the skepticism measure suggest that journalism educators need to re-examine the way in which they address public perceptions of journalism's reliability, accuracy and objectivity. The skepticism results suggest that journalism students – and by extension, the profession at large – would be well served by such a re-examination.

Or would it? After all, as demonstrated by *The New York Times* and other news media organizations, there is an increasingly valid business model that lies in (ostensible) journalism products that are developed for and cater to an audience with an increasingly strident point of view. From a business standpoint, the argument can be made that journalism operations are merely adapting to the new realities of American society. In fact, such an argument could note that the establishment of a hyperpartisan, polarized press would actually reflect the norms that existed when press protections were first written into the Bill of Rights and is thus not unprecedented.

There are other non-financial arguments being made for journalism that is practiced in a manner than eschews objectivity and embraces activism. For example, many high-profile academics and media figures can be found routinely opining on Twitter and elsewhere that objectivity in journalism is not only passé, but it is malign. For example, Professor Jay Rosen of New York University's journalism program has a Twitter feed with more than 300,000 followers where he routinely disdains the idea of objectivity in journalism. He argues that striving for objectivity and balance in reporting

is an incorrect approach. Ironically, he often argues that the problem with pursuing objectivity in news reporting is that doing so does not covers topic in the manner he sees fit – i.e., in accordance with his subjective perspective on the issues being covered. His perspective on journalism advocates for an activist approach that openly chooses sides in contentious matters. Other media professionals in the field frequently offer similar opinions. Some of them talk about the importance of reporting on peoples' truths and thus prioritizing individual perspectives over objective facts when reporting.

Although some argue for this activist approach, it is difficult to envision how perspectives like these can be reconciled with a goal of bolstering confidence in news reporting's accuracy and reliability among the citizenry at large. If journalism educators want journalism to be seen as a consistently reliable source of information about the world around us, then their curricula need to more effectively address the glaring gap between public perceptions of journalism and the lack of skepticism held by the students majoring in the field.

Suggestions moving forward

Given the aforementioned, the question of what journalism educators should do in response to these dynamics arises. The following suggestions are offered for consideration by educators and practitioners.

- **Re-examine the causes of distrust**. Organizations like Gallup, the Pew Research Center and others routinely research and report on public trust levels in the media. Although the new stories about these polls tend to focus on the top-level results, the larger data sets from these polls generate are also available for examination. It would behoove academics and practitioners alike to examine such data closely. In doing

such an examination, it would be helpful to divide the negatives perceptions therein into two broad categories – bad faith criticisms and good faith concerns. In terms of the former, much of the negativity surrounding news media and journalism is driven by political polarization, partisanship and people whose objections can be summed up by the following hypothetical comment: "I just don't like what this news outlet tells me. I want to see news covered the way I like." Obviously, criticisms like that stem from the biases of the audience vs. any failure of journalism. But the different poll results from Pew, Gallup and others are partially driven by concerns from people who simply want more reliable, accurate, reasonably balanced news reports. In these cases, people are willing to accept news they don't like (at least, more willing than the group noted previously). But, they want to be reasonably assured that the news information they consume is accurate and that legitimate angles are not being excluded. A closer examination of polling data that examines concerns in this area could inform journalism professors who could then take the insights they glean from this effort and put them to use in the classroom. Further, getting students involved in such examinations of polling data could empower them to be fairer and more evenhanded in their own reporting when the time comes.

- **Force students to defend stances they oppose before reporting on related stories.** Like accuracy, fairness is an ideal. Even when pursued, it cannot be achieved 100% of the time. A fair degree of subjectivity is unavoidable when deciding how to frame a story. However, perceptions regarding this subjectivity leads to increased erosion in trust among readers and viewers. Salmon (2021) notes that in one recent poll, 56% of Americans agreed with the statement, "Journalists and reporters are purposely trying

to mislead people by saying things they know are false or gross exaggerations“. In that same poll, 58% of respondents said that, “Most news organizations are more concerned with supporting an ideology or political position than with informing the public.”

Given the way the people have historically looked at the press with a skeptical eye, this distrust is never going to be completely disappear. But one way to ensure that future journalists are not inadvertently feeding into this distrust is to better prepare them to make subjective calls about coverage in the fairest way possible. One way to do that is the following exercise: At the beginning of any course in newswriting, students should be required to fill out a brief survey where they identify five sociopolitical issues that they care passionately about. Then, based on their responses, students should be assigned stories on one or more of those issues. However, prior to writing those stories, students should be required to write an opinion piece where they defend the stance *opposite* their own. Such defenses would need to be well researched, and they should be graded in part on the degree to which student makes a good faith effort to defend the stance they oppose. What would this accomplish? By forcing students to go through such exercises, it would help them to better understand their own biases and then recognize them so that they could be fairer and more evenhanded when writing about such stories. Obviously, some care would have to be taken when assigning stories based on this exercise. For example, if a student said that one of the issues they care most about is human trafficking or sex abuse of children, the suggestion above would not be practical. This is why having the student

identify five separate issues is necessary. That will enable the professor to select an issue to assign the student without asking them to defend the indefensible.

- **Teach student journalists about the danger of Twitter.** If there's one thing that consumers trust less than the press, it is social media. A recent poll said an anemic 27% of respondents trusted what they read on social media (Salmon, 2021). Yet, despite this, one of the more popular practices in journalism today is aggressively use social media, particularly Twitter, to distribute content. On one hand, this is not surprising. As noted earlier, the business model for many news media organizations currently depends on so-called clicks to justify advertising revenues. However, hardly a day goes by when a journalist or news media figure does not say something controversial on social media. Sites like Twitter may be great ways to distribute news content in a timely manner, but the way it is being used by many people in the profession is feeding directly into perceptions that "journalists" are unapologetically biased, slanted, and determined to pursue an agenda. The word journalists is in quotation marks in the previous sentence because of the way many media consumers perceive this issue. In truth, many of the news media professionals stirring controversy on Twitter are pundits and columnists, not straight news reporters. But that distinction is often lost on the masses, and this behavior reflects on journalism as a whole.

  That said, it is incumbent upon news media organizations who want to bolster trust in their offerings to use social media judiciously. Ideally, this would mean that newspapers, TVs news operations, and other journalism organizations would place fairly strict regulations on how their employees use Twitter and other social media

when they are talking about the news and issues in the public arena. Of course, this may run afoul of the business imperative of driving clicks for revenues. Also, some might mistakenly argue that such regulations would run afoul of First Amendment protections involving free speech and free press. This is not true; such restrictions would not be any more a violation of a reporter's First Amendment rights than is the standard requirement that editors/producers approve the pieces that reporters/columnists/pundits want to publish/air. Simply put, news media professionals have a right to free speech and to publish what they want; but, they do not have a right to have a job at any given news organization. The tradeoff here is that in return for being given access to the platform a news organization has, an individual reporter or pundit agrees to regulations on their news reporting/commentary activities in public venues.

So, what does this mean in the classroom? Regardless of how the industry ultimately chooses to handle social media, professors need to teach students that what they say on Twitter *in any context* will impact people's perception of their work as a journalist. Fairly or not, students who aspire to be journalists need to decide if they want to have their voices heard as it pertains to their own opinions on the issues *or* if they want to be seen as reasonably objective, reliable sources of accurate information. Those students who choose the latter need to be thoroughly educated on how their use of Twitter and other social media will affect how their work is perceived. For students who wish to be seen as reasonably fair, reliable sources of accurate information, they would be well advised to find different outlets for their opinions and advocacy besides the ones they plan to use in a professional context.

- **"Redefine" objectivity and fairness as an industry standard, not an outlet issue per se**. Low press trust numbers are not a recent phenomenon, but they have been exacerbated by four years of anti-media messaging from the Trump administration/campaign. However, lack of trust in the press is not as partisan as some might think. In the poll noted by Salmon (2021), Democrats' trust in the news media dropped to 57%, its lowest level in years in that poll.

  Given the role that perceptions of inaccuracy and ideological bias played in those poll numbers, a point made by the late Chet Huntley may be instructive. In a 1970 appearance on "The Dick Cavett Show", Huntley noted that while no single media outlet can provide all sides of the story, the press overall does tend to cover all sides of a story (Cavettbiter, 2008). He explained that a person who consumes multiple media sources daily can get a reasonably thorough, well-balanced take on that day's stories. In today's media landscape, where the consumer has more choices than ever, this remains true. Interestingly, when Huntley made his point about watching multiple broadcasts each day, another guest remarked that "If four friends of yours just got shot down in Ohio, you ain't got time to read 20 papers." Sadly, that remark was met with much applause. Although many criticisms of the news media have a valid basis, that remark is not among them. However, it does illustrate an important point in this regard.

  There are ample media outlets available to consumers who want to stay well informed of the news of any given day, and those outlets are accessible in numerous ways. Blaming the press as a whole because a certain outlet or group of outlets does not cover stories the way some people would like is hardly a fair criticism of the

profession. People staying informed is not the news media's job – it is the responsibility of individual citizens. The news media simply provides the means by which individuals can stay informed; and in the aggregate, the press does this in a wholistic fashion that covers all angles and perspectives. This is a point that needs to be driven home again and again, particularly when it comes to talking about objectivity and fairness in the news media. True, no one news media outlet can be completely balanced or entirely "fair" in how it covers a given story. But no news media consumer is reliant on any one single outlet. If this message became a mantra for the industry and those who educate students in the field, it could help reframe public perceptions in a way they would ultimately bolster confidence in the industry as a whole. Obviously, this suggestion goes beyond the classroom. But imagine if news media organizations focused on this message in their own marketing as opposed to simply promoting their own products. Taking a page out of the movie "Miracle on 34th Street," imagine if CNN or *The New York Times* told people who thought their coverage was lacking that they should supplement it with the offerings at the *Wall Street Journal* and/or Fox News. Granted, this would cause problems for some media figures who routinely lambaste their competitors in an effort to promote their own offerings. But if leading figures and outlets adopted a less competitive and more profession-centric approach in their promotions, it would drive home the message that the journalism profession overall is covering multiple angles on all major stories while also providing ample commentary from multiple points of view.

As noted earlier, much of this suggestion focus on dynamics outside the classroom. But if this idea was also routinely delivered to journalism students, they could then

carry this perspective into the news organizations they ultimately work for. If future generations of journalists arrived in the workplace convinced of the need for cross-profession promotion and support of the industry, it would likely be a matter of time before the practice became a reality.

- **Don't confuse historical clarity with contemporaneous passions**. When it comes to making fair, evenhanded judgment calls, students should be taught an important historical lesson. When the limits of objectivity are discussed, key historical events are often cited that illustrate how "both sides" reporting sometimes ill serves the public. Examples include the McCarthy era and the run-up to the Iraq war in the early 2000s. In these examples, history showed that there was a clear right and wrong. But note the key phrase in the previous sentence – "history showed." There have also been incidents where reporters and others were equally convinced that there was a right side to an issue, and reporting ensued that reflected that perspective, only to have "history show" that they were wrong. Examples of this include the Satanic panic of the 1980s and 1990s. The point here is that no one knows what history's judgment will be as they are living through (or reporting on) events. Accordingly, student journalists should be taught to take the greatest of care before deciding one side of an issue is "the right one." Moral certainty can be very tempting when assessing how to report on an issue, but it is often a trap. Despite what some thought leaders in journalism circles have been saying since the 2016 election, this is a path that is fraught with opportunities for well-intentioned but misguided reporting. It also feeds into perceptions of press bias. It is best avoided except in the most extreme of cases.

NML and marginalized audiences

The data from Research Questions Two and Three can be used to establish a preliminary profile of what an undergraduate student with relatively high news media literacy scores might look like. This Gen Z student is likely male – an upperclassmen who is 21 or older. He is also likely to be White. At least one of his parents likely has a bachelor's degree or higher, which suggests the possibility that this student comes from a household with a better-than-average income. Taken at face value, this profile suggests that educational efforts to bolster news media literacy among students are needed most in marginalized communities – that is, among students who are not White, not cis males, and possibly not from families on the higher end of the socioeconomic ladder. This also suggests that such interventions are needed earlier (i.e., freshman year) rather than later. More testing at other institutions, particularly those with a more diverse student body, is needed before this profile can be relied upon. But it does suggest the possibility that marginalized students could especially benefit from NML education programs. This possibility is discussed further below.

Broader implications for education and policy

The potential benefits of this research can be applied to students across an array of majors. Many disciplines call on students to use news media as part of their studies or, at the very least, to be knowledgeable of current events. Accordingly, curricula that include NML interventions can benefit multiple disciplines. Examples of majors that can benefit from students with greater news media literacy include political science, law, business, sociology and marketing to name a few. As such, higher education institutions would be well served to promote and implement programs that teach NML skills.

Unfortunately, higher education – really, public education in general – is in the throes of a deep financial crisis. Enrollment at many colleges nationwide has been falling in recent years. And now, public schools at the secondary and primary levels are facing similar drops across multiple categories – large and small schools, rich and poor, urban and rural – after more than a decade of steady albeit small increases (Kamenetz et al., 2020). For those students that remain in the public system, educators at all levels will have to deal with the "cascading crisis" (Beilock, 2021, n.p.) caused by the Covid-19 pandemic. This crisis comes after a year of prolonged school closures, during which many students have fallen behind. For example, analysts from McKinsey estimated that students at the primary and secondary levels will experience roughly nine months learning loss in math by the end of the current school year (Beilock, 2021).

It is in the midst of these multiple crises and challenges that the argument for the implementation of news media literacy training programs has to be made. As such, even the most passionate of advocates for NML education needs to understand that administrators at all levels of the educational system are challenged now more than they ever have been. In many cases, they are struggling to keep their existing programs intact. And in many cases, they are failing due to financial hardships. Making the case in this environment for the adoption or expansion of media literacy education programs will be difficult, to put it mildly.

That said, the aforementioned challenges correspond with another dynamic that can be leveraged to the advantage of those advocating for news media literacy education. Awareness of racism and other systemic dynamics that unfairly impact marginalized groups is higher now than it has been in decades (Dann, 2020). As noted earlier, the

results of this study indicate that students in marginalized groups may well be those who are in the greatest need of NML interventions. Accordingly, appeals made to public education administrators, as well as to the regulators and government officials who fund them, can be framed according to this need. Yes, times are tough and hard choices must be made about educational priorities. But if education officials and the legislators/regulators they answer to are serious about trying to help marginalized students overcome decades of systemic disadvantages, equipping such students with the skills they need to navigate the media they encounter in their largely digital world must be prioritized.

This argument can be further buttressed by noting the importance of news media literacy skills for all students. If educators want to produce graduates who can become well-informed citizens who are ready to participate in a democracy, NML is a paramount skill set. As noted earlier in this dissertation, Lippman (1922) correctly opined that democracy only works if the citizenry can get the information they need to make important decisions. A key source of that information is the news media. However, in today's fragmented news media landscape, students need to be equipped with the skills necessary to distinguish reliable journalism from pseudo-news. This need underscores the need for NML education at multiple levels of the education system.

Consider the following factors:

- Research on Generation Z, as noted in Chapter Two, indicates that intervention efforts are more effective the earlier they occur.

- The need for news media literacy skills is cross disciplinary as noted earlier. Students majoring in disciplines across academe need to effectively consume journalism products as part of their studies.
- And finally, as noted exhaustively throughout this dissertation, undergraduates in general need good news media literacy skills to effectively navigate the highly fragmented and sometimes unreliable news media landscape, so that they can arm themselves with reliable information that is relevant to their lives.

Taking all of these points into consideration, the data from this study and other research strongly suggest the need for cross-disciplinary news media literacy education courses that are part of the core curriculum at every institution. Further, some of these efforts should be offered concurrently with secondary institutions, particularly those with student bodies featuring high concentrations of marginalized students.

The need for such large-scale news media literacy curricula is partially a reflection of the state of the news media industry itself. Brown's perspective is worth noting here (2006). The problems involving the quality of new reporting that exist are not likely to be solved via a supply side solution. That is to say, people who expect news media outlets and journalism products to somehow revert to an idealized perception of the way things used to be are likely to be disappointed. The current state of polarization and partisanship in America may recede over time, but technological disruption of media industries will not. A highly fragmented news media landscape is here to stay. That means that people must become savvier consumers of journalism products if they want to use them effectively. Accordingly, it should be a priority at every institution of higher education to implement media literacy training programs as part of their core curriculum.

Note that "media literacy" was cited in the previous sentence. Although media literacy in the broader sense was not the focus of this study, any implementation of news media literacy educational programs is likely to happen as part of an effort to provide interventions on the broader topic.

Limitations

As noted in Chapter One and referenced in the preceding section, this study was subject to certain limitations.

First, the applicability of the results to other colleges and universities is subject to further testing. The two institutions used in this study were not representative of all higher education in several regards. For example, given the geography of the institutions involved, the ethnicity of the sample contains a far greater number of White students than might be found in institutions elsewhere. Also, the respondents in this sample skewed strongly female. Accordingly, replication of the study at additional institutions with a more varied demographic mix is called for before the results can be applied to academe writ large in any meaningful way.

Geography was also a limiting factor in this study. The original study (Maksl et al., 2015) targeted high school teens in a large metropolitan area. However, the student population for this study attended midsize institutions in the central United States that were in comparatively low-population areas. Obviously, there could be differences between these students and those at universities in or adjacent to large, metropolitan areas – e.g., undergraduates at the University of Chicago or New York University.

Also, the universities studied were in a deep red state, a factor that should be kept in mind when considering the timing of the study. Data collection occurred less than two

months before a presidential election that was bitterly contested in an already highly polarized environment, and strong criticism of the news media was a prominent feature of both campaign rhetoric and popular discourse. Additionally, the timing meant that political news was prioritized by media outlets while data collection took place. As noted earlier, one study found that women are less inclined to consume political news than their male counterparts. Coupled with the aforementioned female skew in the sample, the preponderance of political news during data collection might have impacted the results, thus making the need for replication apparent.

There was also the coronavirus pandemic's impact on higher education institutions. Already-declining enrollment numbers dipped further during the first full semester that took place during the pandemic (i.e., the time frame when data was collected). Accordingly, the argument could be made that the student body during this semester was dissimilar to what could be expected in a more normal term. Though impossible to quantify, this factor does speak to the need for replication.

The analysis that was done on the survey indicated that the reliability on two survey instruments was less than optimal (Media Locus of Control and Motivations for News Media Consumption). For reasons noted in Chapter Four, this may partially be a result of how news media became a heavily politicized element in the presidential campaign. The was also a problem with the wording of a question in one of those instruments; as explained earlier, this question might have confused respondents. These problems will need to be addressed in future efforts.

Finally, the potential for dishonesty on certain parts of the survey should be noted. For example, a number of questions asked respondents to evaluate their competencies in

areas like Need for Cognition and Media Locus of Control. Because some respondents may invest a certain amount of ego in how they see themselves in these areas, it is possible that they consciously or unconsciously exaggerated their capabilities. For instance, some respondents might be reluctant to admit that they "try to avoid situations that require thinking in depth about something" (Need for Cognition) because of what that might imply about intelligence. Of course, this is often a potential shortcoming with self-reported behavioral data, but it should be kept in mind when evaluating the results of the two instruments noted above.

Recommendations

As stated repeatedly throughout this chapter, replication of these efforts is necessary. However, many changes need to be made to the way that this study is conducted to maximize the utility of future results. Whereas the "Implications" section briefly noted some of these necessary changes, this section provides all the needed changes/improvements that were identified during the course of this study in greater detail. These recommendations are broken down into four areas: The sample, the timing of the study, the instruments, and the analysis.

Sample

As noted earlier, the student body at the two universities where this study was done were relatively skewed in terms of ethnicity and gender. Accordingly, replicating the study at universities and colleges with a more ethnically diverse student body is advisable. For example, it would be interesting to see the results of the study if it were replicated at an historically black college or university (HBCU) as this would provide a stark ethnic contrast with the sample in this study.

Beyond the demographics, it would also be useful to replicate this study in a deep blue state like New York or California. Although the typical Gen Zer – and therefore the typical undergraduate – tends to be progressive in their sociopolitical viewpoints, they may well come from homes with parents who hold a more conservative point of view. This possibility is especially strong in a deep red state like the one where this study was conducted. Thus, it would be interesting to see if these results could be replicated at the University of California Los Angeles (UCLA) or New York University (NYU) located in the heart of New York City. Given the politicization of news media and news media coverage in recent years, polling students who possess strong left-leaning views could generate insights about the applicability of these results to undergraduates beyond the current study.

Once the survey instruments are modified and improved, future replications could be used to build a large cross-sectional data set of responses from journalism students at multiple universities. As more and more responses from journalism students at programs across the nation are compiled, the data set will hopefully become big enough to facilitate the testing mentioned earlier. This would include doing tests within the journalism major to see what differences exist in news media literacy vis a vis the demographic variables.

Timing

An environment with more potential to skew a survey involving news media than fall 2020 is hard to imagine. The bitter presidential campaign that took place within the context of a global pandemic was at the forefront of everyone's mind, and as noted earlier, the conduct of journalists and news media organizations was a hot topic within that context. Accordingly, replications of this study outside a presidential campaign

season after the pandemic subsides are called for. In addition to the normal benefits of replication, administering the survey at later dates will make it possible to determine if the unusual environment that surrounded the administration of this survey impacted the results.

That said, any replications will need to be preceded by one or more pilot efforts. This will be necessary to test some of the changes and improvements made in the survey to ensure that they achieve the desired effect.

Instrument

Another reason for pilot testing is the earlier suggestion that the Current Events Knowledges measure be added to the assessment of NML levels. Also, the two instruments on the survey that scored poorly on reliability testing – Media Locus of Control and Motivations for News Media Consumption – will need to be modified and then pilot tested as well. As part of this, one question – "I follow the news because I'm supposed to" (4.2 under the MLOC instrument) – will need to be replaced as part of the updates to that instrument. As previously explained, this question has the potential to cause confusion because of the phrase "because I'm supposed to". Depending on the respondent, that could be interpreted as a statement of begrudging obligation or cheerful compliance with a good habit. Thus, the wording will need to be clarified. "I follow the news because I feel like I have to" is one possible alternative if a negative connotation is desired. A more positive alternative might be "I follow the news so I can better understand the world".

Another modification to the survey that needs to be considered is the addition of new variables for use in the multiple regression (research question 2). In all but one case,

the amount of variance that was accounted for by the independent variables in that model was low. Accordingly, as part of pilot testing, new variables should be introduced to see what effect, if any, they have. Possibilities in this area include self-reported ideological leanings, political party affiliation, voting record as it relates to specific candidates, self-reported GPA, and other measures. Variables that show promise can be added to large-scale replications that follow.

One concern mentioned earlier is the possibility of exaggerated responses on certain measures, such as Need for Cognition. When confronted with a question that basically asks someone whether or not they like to think hard, not many people are likely to respond in the negative. Doing so can run afoul of the image many people hold of themselves vis-à-vis their intellect. The same problem exists on a measure like Media Locus of Control, which poses questions about media effects that may be subject to the same forces of respondent ego. Accordingly, pilot testing needs to employ new questions that address this problem. One possibility is the use of repetitive questions. By asking the same question more than once with different phrasings, it could filter out the effects of respondent vanity where it exists. That said, it should be noted that the survey is already very long. Adding additional questions will need to be done with great care lest it exacerbate the potential for respondent fatigue. Another possibility is replacing the existing Likert statements on these measures with the questions that ask respondents their preference in certain contrasting activities. For example, on the Need for Cognition instrument, they might be asked if they would rather read a book or watch a movie; read a newspaper or watch a sports event on TV; and so on. If developed, such questions would

be designed to gauge the extent to which respondents like to push themselves intellectually.

Finally, the News Media Consumption instrument needs to be modified significantly. The results of this study indicated that respondents spent six or more hours consuming news media on a typical weekday. That is simply implausible. The problem in this case seems to be the unreliability of self-reported data when it comes to time spent on an activity. There are several ways this problem can be addressed:

- One possibility would be to give respondents the opportunity to see what their total time spent across all media types comes out to after they answer questions about time spent on individual media types. Perhaps if they saw a total number that was too high, they would go back and adjust their individual answers.
- The time spent question could be done as a multiple choice query where respondents are given time ranges to choose from. On this survey, they simply wrote in the estimated number of minutes.
- Time spent questions could be replaced with queries that explore different aspects of this research question. For example, for any media type that respondents said they consumed content from within the past week, they could be asked to list the names of three media outlets from that type that they consumed. Such an unaided recall question would not address the time issue directly, but it could provide more insights into where respondents get their news content.
- If the intent is to precisely measure how much time subjects spend consuming media, a survey may not be the most viable instrument for to collect that data accurately. Other methods may need to be used – i.e., ethnographic.

- The News Media Consumption instrument needs to be expanded to more thoroughly explore how Gen Z uses social media to access news media content. Extensive research exists in the literature that indicates that social media is one of the main access point of news media content for Gen Z. Given that, future surveys must be equipped with instruments and questions that can explore this critical dynamic. Unfortunately, the relevant measure in this study performed very poorly per the subsequent analysis; hence, the need for changes.

Analysis

Assuming that adequate sample sizes can be generated in replications, it would be interesting to conduct the analysis with more than two news media literacy clusters. For example, respondents could be placed into three NML clusters – high, medium and low. Then, the same tests in this study could be run to see how members in the different NML groupings fare. Among the potential benefits of this change, a third cluster might increase cohesion and improve the Silhouette coefficient that is achieved. Although this study did better than the original Maksl et al. (2015) study in terms of its Silhouette coefficient (0.5 versus 0.4), values above 0.5 are optimal. Creating a third cluster might enable this.

Concluding Remarks

This dissertation explored the differences in news media literacy levels between undergraduate students at two central U.S. universities. It examined those differences from several perspectives. This included a cluster analysis to determine where respondents placed in the high or low news media literacy cluster; a review of how placement in either cluster was related to scores on a number of instruments measuring media attitudes and preferences; a look at how various demographic variables related to

placement in either cluster; and finally, how students majoring in journalism-related disciplines fared vs. other undergraduates in terms of placement in the high or low NML cluster. That last analysis, arguably the most important one in this study, indicated that students majoring in journalism-related fields placed in the high NML cluster at a much higher rate than students in other majors.

The findings in this dissertation indicate the need for continued research and replication to refine and ultimately establish the survey instruments as a reliable measure of NML levels. Once accomplished, this measure can be used to establish and promote best practices in NML education programs nationwide.

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APPENDICES

APPENDIX A: SURVEY

Thank you for clicking the link for this survey. Information about this survey is listed below. The actual survey begins on the next page.

Title: Media literacy study.

Investigator: Mike Breslin, College of Education and Human Sciences.

Purpose: This survey is being done as part of the investigator's dissertation study.

What to Expect: This research study is being administered online. Participation in this research is voluntary and will involve completion of this survey. You may skip any questions that you do not wish to answer. It should take you 10-20 minutes to complete.

Risks: There are no risks associated with this project which are expected to be greater than those ordinarily encountered in daily life.

Benefits: There are no direct benefits to you.

Compensation: You will receive no compensation for your participation.

Your Rights and Confidentiality: Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time. Should you choose to complete the survey after reading this page, your participation will be interpreted as informed consent.

Confidentiality: None of the questions in this survey will identify participants. The records of this study will be kept private. Research records will be stored on password-protected platforms, and only researchers and individuals responsible for research oversight will have access to the records.

Contacts: You may contact the researcher at the following address and phone number should you desire to discuss your participation in the study and/or request information about the results of the study: Mike Breslin; Higher Education and Student Affairs Program; College of Education and Human Sciences; Oklahoma State University; Stillwater, OK 74077, 405.406.6933, mike.breslin@okstate.edu. If you have questions about your rights as a research volunteer, you may contact the Oklahoma State University IRB Office at 223 Scott Hall, Stillwater, OK 74078, 405-744-3377, irb@okstate.edu.

If You Choose to Participate: Please click the right arrow at the bottom of this page if you choose to participate. By clicking the arrow, you are indicating that you freely and voluntarily agree to participate in this study, and you also acknowledge that you are at least 18 years of age.

Prize Drawing: Students who respond to the survey will have the opportunity to enter their email address at the end of the survey for a chance to win one of eight prizes of up to $100. For those students who choose to enter the drawing, their names and email addresses will not be associated with their survey responses in any way. The only person who will see them is the principal investigator, who will conduct the drawing, and your name and contact information will not be shared or used in any other way.

Screening Question
Where are you currently an undergraduate student?

- Oklahoma State University
- University of Central Oklahoma
- Neither – I am not an undergraduate student at OSU or UCO

[Anyone answering 'Neither of the above' will be screened out immediately.]

Any reference to "media" below refers to all media whether they are entertainment media or news media. Questions below concerning news media specifically will be asked using the terms "news media" or "news". When answering these questions, the "news media" is defined as follows:

> The news media are those elements of the mass media that focus on delivering news to the general public or a target public. These include print media (newspapers, news magazines), broadcast news (radio and television), and more recently the Internet (online newspapers, news blogs, etc.). These are different from media outlets that focus on delivering entertainment content.

Instrument 1
Questions about Need for Cognition

Please tell me how much you agree or disagree with each of the following statements:

1. "I don't like to have to do a lot of thinking."
2. "I try to avoid situations that require thinking in depth about something."
3. "I prefer to do something that challenges my thinking abilities rather than something that requires little thought." (reverse-coded)
4. "I prefer complex to simple problems." (reverse-coded)
5. "Thinking hard and for a long time about something gives me little satisfaction."

Instrument 2
Questions about Media Locus of Control

Please tell me how much you agree or disagree with each of the following statements: (all answers reverse coded)

1. "If I am misinformed by the news media, it is my own behavior that determines how soon I will learn credible information."
2. "I am in control of the information I get from the news media."
3. "When I am misinformed by the news media, I am to blame."
4. "The main thing that affects my knowledge about the world is what I myself do."
5. "If I pay attention to different sources of news, I can avoid being misinformed."
6. "If I take the right actions, I can stay informed."

Instrument 3[1]
Questions about Knowledge of News Media Structures

1. Most media outlets in the United States are: a.) For-profit business (**correct**); b.) Owned by the government; c.) Non-profit businesses; d.) Don't know
2. If you wanted to get a job as a news reporter in the US, you would need to get a license from… a.) The Federal Communications Commission; b.) The Federal Trade Commission; c.) Society of Professional Journalists; d.) News reporters are not required to be licensed (**correct**); e.) Don't know
3. In 1983, around 50 companies owned most of the media outlets Americans consumed. How many companies own most of the media we consume today? a.) 100; b.) 50; c.) 25; d.) 5 (**correct**); e.) Don't know
4. Which of the following cable news networks is generally thought to have a politically conservative bias? a.) CNN; b.) Fox News (**correct**); c.) MSNBC; d.) MTV News; e.) Don't know
5. Which of the following news outlets does NOT depend primarily on advertising for financial support? a.) CNN; b.) PBS (**correct**); c.) The New York Times; d.) Newsweek magazine; e.) Don't know
6. When it comes to reporting the news, the main difference between a website like Google News and a website like CNN.com is that: a.) Google does not have reporters who gather information, while CNN does (**correct**); b.) Google focuses on national news, while CNN focuses on local news; c.) Google has more editors than CNN does; d.) Google charges more money for news than CNN does; e.) Don't know
7. Who has the most influence on what gets aired on the local TV news? a.) Individual reporters; b.) The anchor – i.e., the person reading the news; c.) The cameraman; d.) The producer/editor (**correct**); e.) Don't know
8. The amount of racial/ethnic minority coverage in the news: a.) Accurately reflects the proportion of minorities in the U.S. population; b.) Under-represents/reflects the proportion of minorities in the U.S. population (**correct**); c.) Over-represents/reflects the proportion of minorities in the U.S. population; d.) Don't know

[1] The sequencing of most response options to each question in this instrument and instrument 7 (current events) will randomized to avoid response order bias. Responses like "don't know", "all of the above" and "none of the above" will always be presented last.

9. Coverage of election campaigns in the news usually centers on: a.) Who's winning (**correct**); b.) In-depth analysis of where candidates stand on the issues; c.) The candidates' educational backgrounds; d.) Don't know
10. One common criticism of the news is that it is not objective. What do people who make that criticism typically mean by it? a.) The reporter gives only the facts about the story; b.) The reporter puts his or her opinion in the story (**correct**); c.) The reporter's story relies too much on the opinions of people who are neutral; d.) The reporter doesn't make the purpose of the story clear; e.) Don't know
11. Writing a press release is typically the job of: a.) A reporter for CNN.com; b.) A spokesperson for Coca-Cola (**correct**); c.) A lawyer for Yahoo!; d.) A producer for NBC Nightly News; e.) Don't know
12. Most people think the news has: a.) A greater effect on themselves than other people; b.) A greater effect on other people than themselves (**correct**); c.) The same effect on themselves as others; d.) No effect on anyone; e.) Don't know
13. People who watch a lot of television news often tend to think the world is: a.) More violent and dangerous than it actually is (**correct**); b.) Less violent and dangerous than it actually is; c.) Just as violent and dangerous as it actually is; d.) Don't know
14. If a topic gets a lot of coverage in the news, people who pay attention to the news are: a.) More likely to think the topic is important (**correct**); b.) Less likely to think the topic is important; c.) Neither more nor less likely to think the topic is important; d.) Don't know
15. Most news outlets depend on advertising to make money. What is a possible effect of this? a.) News could encourage people to buy things they don't need; b.) News could emphasize things that aren't really important; c.) All of the above (**correct**); d.) None of the above. There are no effects; e.) Don't know

Instrument 4
Questions about Motivations for News Consumption

Please tell me how much you agree or disagree with each of the following statements:

1. "I don't see what news does for me."
2. "I follow the news because I'm supposed to." (reverse coded)
3. "I follow the news for my own good." (reverse coded)
4. "I follow the news because I like to." (reverse coded)

Instrument 5
Questions about News Media Skepticism

Please tell me how much you agree or disagree with each of the following statements:

1. "I think the news media are fair."
2. "I think the news media tell the whole story."
3. "I think the news media are accurate."
4. "I don't think the news media can be trusted." (reverse-coded)
5. "I think the news media prioritize being first to report a story." (reverse-coded)

6. "I think the news media get in the way of society solving its problems." (reverse-coded)
7. "I trust the media to report the news fairly."
8. "I have confidence in the people running the institutions of the press."

Instrument 6
Questions about News Media Consumption
NOTE: For the following questions, bear in mind that news media outlets deliver their information in more than one way. For example, a newspaper publishes its content in hard copy form; via websites; via apps on smartphones; through their social media feeds; and so forth. So, when answering the questions below, please answer "Yes" if you consume a type of news media – newspaper, TV news, radio news, online news – regardless of the way you access it.

In other words, these questions are about the sources of news media you consume (newspapers, tv, etc.) not the way you access those sources (via apps, websites, hard copy, etc.).

1. On a typical weekday, do you read a daily **newspaper**, or not? Yes No (next question will not be displayed if "No")
2. About how much time (in minutes) do you spend reading a daily **newspaper** on a typical weekday? [Insert slider scale ranging from 1-360 minutes]
3. On a typical weekday, do you watch the news or any news programs from a **TV news source**, or not? Yes No (next question will not be displayed if "No")
4. About how much time (in minutes) do you spend watching the news or any news programs from a **TV news source** on a typical weekday? [Insert slider scale ranging from 1-360 minutes]
5. On a typical weekday, do you listen to the news or any news programs from a **radio news source**, or not? Yes No (next question will not be displayed if "No")
6. About how much time (in minutes) do you spend listening to the news or any news programs from a **radio news source** on a typical weekday? [Insert slider scale ranging from 1-360 minutes]
7. On a typical weekday, do you get any news from **Internet-only news outlets** (for example – Huffington Post, Buzzfeed, Vice, etc.), or not? Yes No (next question will not be displayed if "No")
8. About how much time (in minutes) do you spend getting from **Internet-only news outlets** on a typical weekday? [Insert slider scale ranging from 1-360 minutes]
9. On a typical weekday, do you get any news from **podcasts**, or not? Yes No (next question will not be displayed if "no")
10. About how much time (in minutes) do you spend getting news from **podcasts** on a typical weekday? [Insert slider scale ranging from 1-360 minutes]

These next question is about how you use social media to access news information regardless of what news sources you access via social media.

11. On a typical weekday, do you get any news from **social media sites,** or not? *NOTE: This question is about the time spent consuming news on social media, not other social media activities you may engage in (i.e., recreation, entertainment, etc.).* Yes No
12. About how much time (in minutes) do you spend getting news from **such social media sources** on a typical weekday? [Insert slider scale ranging from 1-360 minutes]
13. What are some of the news source you typically consume on social media? Please provide 1-3 examples. [Three separate dialogue boxes]

Instrument 7
Questions about Current Events Knowledge

1. Who is Mike Pence? a.) Vice President (**correct**); b.) UN Ambassador; c.) Governor of Illinois; d.) Don't know
2. Which presidential candidate is PRO-LIFE, that is, supports restricting access to abortion in most cases? a.) Biden; b.) Trump (**correct**); c.) Neither; d.) Don't know
3. Which presidential candidate supports a more lenient policy regarding illegal immigration? a.) Biden (**correct**); b.) Trump; c.) Both; d.) Don't know
4. What legislation was passed in March 2020 to help American citizens and business deal with the medical and economic impacts of the coronavirus lockdown? a.) The ILLS act; b.) The CARES act (**correct**); c.) The COVID act d.) The PAN act; e.) Don't know
5. Who did Joe Biden recently pick as his running mate on the Democratic ticket for the presidency? a.) Elizabeth Warren; b.) Kamala Harris (**correct**); c.) Amy Klobuchar; d.) None of the above; e.) Don't know
6. What United Nations organization came under heavy scrutiny for its early handling of the coronavirus pandemic in February and March? a.) CDC; b.) WHO (**correct**); c.) IRS; d.) NEA; e.) Don't know
7. Who is the governor of Oklahoma? a.) Kevin Stitt (**correct**); b.) Mary Fallin; c.) Steve Lankford; d.) Mick Cornett; e.) Don't know

You're almost done!

Instrument 8
Questions about Demographics

1. How old are you? [A drop-down menu will be used here. Anyone answering 17 or under will be screened out immediately.]
2. What is your current class standing? Freshman (0-30 credit hours completed); Sophomore (31-60 credit hours completed); Junior (61-90 credit hours completed); Senior (91 credit hours or higher completed); Graduate student (all levels).
3. What gender do you identify as? Male (cis); Male (trans); Female (cis); Female (trans); Nonbinary; Prefer not to answer
4. What is your ethnicity? African-American; Asian/Pacific Islander; Indian; Latino/Hispanic; Multiethnic; Native American; White; Other (text box available)

5. What is your major? Please choose from the alphabetical dropdown menu below. (If you are a double major, pick the major that is closest to the career field you hope to work in after graduation.) [Drop-down menu will be used – see complete lists at the end of the survey]
6. What is the highest level of school completed by either of your parents? Less than high school; High school/GED; Some college but no degree; Vocational/Technical/Associate/Community College degree; Bachelor's degree; Master's degree; Doctorate; Don't know/Not sure
7. To what extent do you agree or disagree with the following statement about your Internet access?: "I have reliable access to the Internet most of the time." (5-point Likert scale response)

Prize drawing

Optional: Enter your name and email for a chance to win up to $100.

Participants who provide their contact info will be entered into a drawing for **one prize of $100, one prize of $50, or one of six prizes of $25**. Prize amounts will be based on the order of the drawing with the first name drawn receiving $100, the second name receiving $50, and the next six names receiving $25 each. Prize money will be disbursed by Visa gift card, PayPal, Venmo or the Cash app, based on recipient preference.

Name: _____

Email: _____

OSU majors

Undeclared
Accounting
Aerospace Administration And Operations
Aerospace Administration And Operations (Aerospace Security)
Aerospace Administration And Operations (Aviation Management)
Aerospace Administration And Operations (Professional Pilot)
Aerospace Administration And Operations (Technical Service Management)
Aerospace Engineering
Agribusiness
Agribusiness (Accounting Double Major)
Agribusiness (Agricultural Communications Double Major)
Agribusiness (Community And Regional Analysis)
Agribusiness (Crop And Soil Sciences)
Agribusiness (Farm And Ranch Management)
Agribusiness (International)
Agribusiness (Natural Resources)
Agribusiness (Pre-Law)

Agribusiness (Pre-Veterinary Business Management)
Agricultural Communications
Agricultural Communications (Agribusiness Double Major)
Agricultural Communications (Animal Science Double Major)
Agricultural Economics
Agricultural Education
Agricultural Education (Agricultural Business And Economics)
Agricultural Education (Agricultural Communications)
Agricultural Education (Animal Agriculture)
Agricultural Education (Horticultural Sciences)
Agricultural Education (Multidisciplinary)
Agricultural Education (Natural Resources)
Agricultural Leadership
Agricultural Leadership (Extension Education)
Agricultural Leadership (International Studies)
American Studies
American Studies (Pre-Law)
Animal Science
Animal Science (Agricultural Communications Double Major)
Animal Science (Agricultural Education Double Major)
Animal Science (Animal Biotechnology)
Animal Science (Business)
Animal Science (Livestock Merchandising)
Animal Science (Pre-Veterinary Animal Science)
Animal Science (Production)
Animal Science (Ranch Operations)
Apparel Design And Production
Applied Exercise Science (Pre-Professional)
Applied Exercise Science (Strength And Conditioning)
Architectural Engineering (Construction Project Management)
Architectural Engineering (Mechanical, Electrical And Plumbing)
Architectural Engineering (Structures)
Architecture
Art History
Arts Administration
Biochemistry
Biochemistry And Molecular Biology
Biochemistry And Molecular Biology (Pre-Medical Or Pre-Veterinary Science)
Biology
Biology (Allied Health)
Biology (Environmental Biology)
Biology (Pre-Medical Sciences)
Biology (Secondary Teacher Certification)
Biosystems Engineering
Biosystems Engineering (Bioprocessing And Food Processing)
Biosystems Engineering (Environmental And Natural Resources)

Biosystems Engineering (Machine Systems And Agricultural Engineering)
Biosystems Engineering (Pre-Medical)
Chemical Engineering
Chemical Engineering (Biomedical/Biochemical)
Chemical Engineering (Pre-Medical)
Chemistry (ACS)
Chemistry (Departmental Degree)
Chemistry (Pre-Health/Pre-Law)
Chemistry (Secondary Teacher Certification)
Child And Family Services
Civil Engineering
Civil Engineering (Environmental)Communication Sciences And Disorders
Computer Engineering
Computer Science
Construction Engineering Technology
Construction Engineering Technology (Building)
Construction Engineering Technology (Heavy)
Early Childhood Education
Economics - Arts & Sciences
Economics – Business
Economics - Business (Business Economics And Quantitative Studies)
Economics - Business (Pre-Law)
Electrical Engineering
Electrical Engineering Technology
Electrical Engineering Technology (Computer)
Elementary Education
English
English (Creative Writing)
English (Pre-Law)
English (Professional Writing)
English (Screen Studies)
Entomology
Entomology (Bioforensics)
Entomology (Insect Biology And Ecology)
Entomology (Pre-Veterinary And Pre-Medical Sciences)
Entrepreneurship
Environmental Science
Environmental Science (Environmental Policy)
Environmental Science (Natural Resources)
Environmental Science (Water Resources)
Family And Consumer Sciences Education
Finance
Fire Protection And Safety Engineering Technology
Food Science
Food Science (Food Industry)
Food Science (Food Safety)

Food Science (Meat Science)
Food Science (Science)
French
French (Business Essentials)
French (Pre-Law)
General Business
General Business (Pre-Law)
Geography
Geology
Geology (Environmental Geology)
Geology (Petroleum Geology)
Geology (Pre-Law)
Geology (Secondary Teaching Certification)
Geospatial Information Science
German
German (Business Essentials)
German (Pre-Law)
Global Studies
Graphic Design
Health Education And Promotion
Health Education And Promotion (Exercise And Health)
Health Education And Promotion (Public Health)
History
History (Business Essentials)
History (Pre-Law)
Horticulture
Horticulture (Horticultural Business)
Horticulture (Horticultural Science)
Horticulture (Public Horticultural)
Horticulture (Turf Management)
Hospitality And Tourism Management
Industrial Engineering And Management
Interior Design
International Business
Landscape Architecture
Landscape Management
Management
Management (Business Sustainability)
Management (Human Resource Management)
Management (Non-Profit Management)
Management (Sports Management)
Management Information Systems
Management Information Systems (Data Science)
Management Information Systems (Information Assurance)
Marketing
Mathematics

Mathematics (Actuarial And Financial Mathematics)
Mathematics (Applied Mathematics)
Mathematics (Pre-Law)
Mathematics (Pre-Medical Sciences)
Mathematics (Secondary Teacher Certification)
Mechanical Engineering
Mechanical Engineering (Petroleum)
Mechanical Engineering (Pre-Medical)
Mechanical Engineering Technology
Medicinal And Biophysical Chemistry
Merchandising
Microbiology And Molecular Genetics
Microbiology And Molecular Genetics (Medical Laboratory Science)
Microbiology And Molecular Genetics (Pre-Medical Professional)
Multidisciplinary Studies (Business Essentials)
Multidisciplinary Studies (Liberal Studies)
Multidisciplinary Studies (Pre-Law)
Multimedia Journalism **(part of purposive target)**
Music
Music (Performance (Instrumental))
Music (Performance (Keyboard))
Music (Performance (Vocal))
Music Education
Music Industry
Natural Resource Ecology And Management
Natural Resource Ecology And Management (Fisheries And Aquatic Ecology)
Natural Resource Ecology And Management (Forest Ecology And Management)
Natural Resource Ecology And Management (Rangeland Ecology And Management)
Natural Resource Ecology And Management (Wildlife Biology And Pre-Veterinary Science)
Natural Resource Ecology And Management (Wildlife Ecology And Management)
Nutritional Sciences (Allied Health)
Nutritional Sciences (Dietetics)
Nutritional Sciences (Human Nutrition/Pre-Medical Sciences)
Nutritional Sciences (Public Health Nutrition)
Philosophy
Philosophy (Pre-Law)
Philosophy (Pre-Ministry)
Physical Education
Physical Education (Teacher Education)
Physics
Physics (Applied Physics)
Physics (Secondary Teaching Certification)
Physiology
Physiology (Pre-Medical Sciences)
Plant Biology

Plant Biology (Cell Biology And Molecular Genetics)
Plant Biology (Ecology And Evolutionary Biology)
Plant Biology (Pre-Law Environmental Policy)
Plant Biology (Pre-Pharmacy)
Plant And Soil Sciences
Plant And Soil Sciences (Agronomic Business)
Plant And Soil Sciences (Crop Production And Management)
Plant And Soil Sciences (Plant Biotechnology And Improvement)
Plant And Soil Sciences (Soil And Water Resources)
Political Science (BA)
Political Science (BA) (Pre-Law)
Political Science (BS)
Political Science (BS) (Pre-Law)
Psychology (BA)
Psychology (BS)
Psychology (Business Essentials)
Psychology (Pre-Law) (BA)
Psychology (Pre-Med) (BS)
Psychology (Pre-Occupational Therapy) (BS)
Psychology (Pre-Physical Therapy) (BS)
Recreation Management
Recreation Therapy
Secondary Education (English)
Secondary Education (Foreign Language)
Secondary Education (Social Studies)
Sociology
Sociology (Anthropology)
Sociology (Applied Sociology)
Sociology (Pre-Law)
Sociology (Pre-Med)
Spanish
Spanish (Pre-Law)
Sports Media
Statistics
Statistics (Business Essentials)
Strategic Communication
Studio Art (BA)
Studio Art (BFA)
Theatre
Zoology
Zoology (Ecology And Conservation Biology)
Zoology (Pre-Medical Sciences)
Zoology (Pre-Veterinary Sciences)

UCO majors

Undeclared
Accounting, (B.S.)
Accounting, (Certificate)
Actuarial Science, (B.S.)
Applied Liberal Arts, (B.A.)
Art - Studio Art, (B.F.A.)
Art Education, (B.A.Ed.)
Art History, (B.A.)
Arts Administration, (B.A.)
Audio Production, (B.A.T.)
Biology - Biomedical Science, (B.S.)
Biology - Medical Laboratory Science, (B.S.)
Biology, (B.S.)
Biomedical Engineering, (B.S.)
Business Administration-Business Law, (B.B.A.)
Business Administration-General Business, (B.B.A.)
Business Administration-International Business, (B.B.A.)
Career, Technical and Workforce Development - Family & Consumer Sciences, (B.S.)
Career, Technical and Workforce Development - Trade & Industrial, (B.S.)
Career, Technical and Workforce Development - Workforce Development (B.S.)
Chemistry - ACS Certificate, (B.S.)
Chemistry - Health Sciences, (B.S.)
Chemistry, (B.S.)
Commercial Music, (B.A.T.)
Communication - Interpersonal Communication, (B.A.)
Computer Science - Applied, (B.S.)
Computer Science - Information Science, (B.S.)
Computer Science, (B.S.)
Contemporary Music Business, (A.A.S.)
Contemporary Music Performance, (A.A.S.)
Contemporary Music Production, (A.A.S.)
Criminal Justice - Corrections, (B.A.)
Criminal Justice - General Criminal Justice, (B.A.)
Criminal Justice - Police, (B.A.)
Dance Education, (B.A.Ed.)
Dance, (B.F.A.)
Data Science, (B.S.)
Design - Graphic Design, (B.F.A.)
Design - Interior Design, (B.F.A.)
Early Childhood Education, (B.S.Ed.)
Economics-(B.B.A.)
Economics-Energy Economics -(B.B.A.)
Electrical Engineering, (B.S.)
Elementary Education, (B.S.Ed.)

Engineering Physics - Physics, (B.S.)
English - Creative Writing, (B.A.)
English Education, (B.A.Ed.)
English, (B.A.)
Family Life Education - Child Development, (B.S.)
Family Life Education - Gerontology, (B.S.)
Family Life Education - Marriage and Family, (B.S.)
Fashion Marketing, (B.S.)
Finance - Insurance and Risk Management, (B.B.A.)
Finance, (B.B.A.)
Financial Planning, (Certificate)
Forensic Science - Chemistry, (B.S.)
Forensic Science - Digital Forensics, (B.S.)
Forensic Science - Molecular Biology, (B.S.)
Forensic Science, (B.S.)
Funeral Service, (B.S.)
Funeral Service, (Certificate)
General Studies, (B.S.)
Geography, (B.A.)
History - Museum Studies, (B.A.)
History Education, (B.A.Ed.)
History, (B.A.)
Humanities, (B.A.)
Information Systems and Operations Management - Management Information Systems, (B.B.A.)
Information Systems and Operations Management - Operations & Supply Chain Mgmt, (B.B.A.)
Kinesiology - Exercise/Fitness Management, (B.S.)
Kinesiology - Outdoor and Community Recreation, (B.S.)
Management - Human Resource Management, (B.B.A.)
Management - PGA Golf Management, (B.B.A.)
Management, (B.B.A.)
Marketing - Professional Selling, (B.B.A.)
Marketing, (B.B.A.)
Mathematics - Applied Mathematics, (B.S.)
Mathematics - Statistics, (B.S.)
Mathematics Education, (B.S.Ed.)
Mathematics, (B.S.)
Mechanical Engineering, (B.S.)
Modern Language - French, (B.A.)
Modern Language - German, (B.A.)
Modern Language - Spanish, (B.A.)
Modern Language Education - French, (B.A.Ed.)
Modern Language Education - German, (B.A.Ed.)
Modern Language Education - Spanish, (B.A.Ed.)
Music - Instrumental Performance, (B.M.)

Music - Jazz Performance, (B.M.)
Music - Musical Theatre, (B.M.)
Music - Vocal Performance, (B.M.)
Music Education, (B.M.Ed.)
Music, (B.A.)
Nursing, (B.S.)
Nutrition, Dietetics, and Food Management, (B.S.)
Occupational Safety, (B.S.)
Organizational Leadership, (B.S.)
Philosophy, (B.A.)
Photographic Arts, (B.A.)
Physical Education/Health, (B.S.Ed.)
Political Science - Public Administration, (B.A.)
Political Science, (B.A.)
Professional Media, (B.A.) **(part of purposive target)**
Psychology, (B.A.)
Public Health, (B.S.)
Science Education - Biology, (B.S.Ed.)
Science Education - Chemistry, (B.S.Ed.)
Science Education - General Science, (B.S.Ed.)
Science Education - Physical Science, (B.S.Ed.)
Science Education - Physics, (B.S.Ed.)
Sociology - Human Services, (B.A.)
Sociology-Substance Abuse Studies, (B.A.)
Sociology, (B.A.)
Software Engineering, (B.S.)
Special Education - Mild-Moderate Disabilities, (B.S.Ed.)
Special Education - Severe-Profound/Multiple Disabilities, (B.S.Ed.)
Speech-Language Pathology, (B.S.)
Strategic Communications-Organizational Communication, (B.A.)
Strategic Communications-Strategic Communications, (B.A.)
Technical Writing, (B.A.)
Technology Application Studies, (B.A.T.)
Theatre Arts - Design and Technology, (B.F.A.)
Theatre Arts - Performance, (B.F.A.)
Theatre/Communication Education, (B.F.A.Ed.)
Women's, Gender, and Sexuality Studies, (B.A.)

APPENDIX B: TABLE OF RESEARCH METHODS

Research Question	Independent Variable(s) (categorical or continuous?)	Source of IV(s) (e.g., specific items or sets of items)	Dependent Variable(s) (categorical or continuous?)	Source of DV(s) (e.g., specific items or sets of items)	Analyses
1. N/A	• Need for cognition (NFC) • Media locus of control (MLOC) • Knowledge of news media structures *Continuous (all)*	Responses to instruments 1, 2 and 3 on the survey, respectively	News media literacy (NML) level *Categorical*	The DV will be established by conducting a two-step cluster analysis of the individual mean scores for respondents in each of the three instruments noted in the IV column. Once done, the respondents will be placed into one of two groups - high NML or low NML – based on the cluster analysis	*Two-step cluster analysis* will be done to facilitate the analyses noted below *Silhouette coefficient* will test the cohesion of the clusters

2. RQ_1 /H_1	News media literacy (NML) level *Categorical*	Responses to Instrument 1 on survey	Need for cognition (NFC) *Continuous*	The responses from the first 3 instruments on the survey will be grouped using a cluster analysis to divide respondents into high and low NML groups The differences in the mean scores between the high and low groups will then be tested for significance	*Independent t test* to check for significance in the means of the high and low groups
3. RQ_1/H_1	News media literacy (NML) level *Categorical*	Responses to Instrument 2 on survey	Media locus of control (MLOC) *Continuous*	See row 2 of this appendix	*Independent t test* to check for significance in the means of the high and low groups
4. RQ_1/H_1	News media literacy (NML) level *Categorical*	Responses to Instrument 3 on survey	Knowledge of news media structures *Continuous*	See row 2 of this appendix	*Independent t test* to check for significance in the means of the high and low groups

5. RQ_2/H_2	News media literacy (NML) level *Categorical* *Controlling for 2+ continuous and categorical variables: Age, gender, ethnicity, parental education level and class standing*	The cluster analysis noted above	Motivation for News Media Consumption *Continuous*	Responses to Instrument 4 on survey	*Multiple regression* will be used to control for demographic variables
6. RQ_2/H_3	News media literacy (NML) level *Categorical* *Controlling for 2+ continuous and categorical variables: Age, gender, ethnicity, parental education level and class standing*	The cluster analysis noted above	News media skepticism *Continuous*	Responses to Instrument 5 on survey	*Multiple regression* will be used to control for demographic variables

7. RQ_2/H_4	News media literacy (NML) level *Categorical* *Controlling for 2+ continuous and categorical variables: Age, gender, ethnicity, parental education level and class standing*	The cluster analysis noted above	News media consumption *Continuous*	Responses to Instrument 6 on survey	*Multiple regression* will be used to control for demographic variables
8. RQ_2/H_5	News media literacy (NML) level *Categorical* *Controlling for 2+ continuous and categorical variables: Age, gender, ethnicity, parental education level and class standing*	The cluster analysis noted above	Current events knowledge *Continuous*	Responses to Instrument 7 on survey	*Multiple regression* will be used to control for demographic variables

9. RQ_3/H_6	Age *Ordinal*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Ordinal*	See row 1 of this appendix	Goodman & Kruskal's gamma coefficient
10. RQ_3/H_7	Gender *Categorical*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Categorical*	See row 1 of this appendix	Chi-square
11. RQ_3/H_8	Ethnicity *Categorical*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Categorical*	See row 1 of this appendix	Chi-square
12. RQ_3/H_9	Parental education level *Ordinal*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Ordinal*	See row 1 of this appendix	Goodman & Kruskal's gamma coefficient
13. RQ_3/H_{10}	Internet access *Ordinal*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Ordinal*	See row 1 of this appendix	Goodman & Kruskal's gamma coefficient
14. RQ_3/H_{11}	Class standing *Ordinal*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Ordinal*	See row 1 of this appendix	Goodman & Kruskal's gamma coefficient

15. RQ_4/H_{12}	Major *Categorical*	Responses to "Screening question and demographics" on survey	News media literacy (NML) level *Categorical*	See row 1 of this appendix	Chi-square

VITA

MIKE BRESLIN

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Thesis: NEWS MEDIA LITERACY AMONG UNDERGRADUATE JOURNALISM STUDENTS

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